UTAH DEPARTMENT OF TRANSPORTATION

CONSTRUCTION

MANUAL OF INSTRUCTION

July 2004

FOR INFORMATION ONLY

THIS MANUAL

This manual has been published to provide personnel engaged in construction work with a convenient **guide** for the procedures and methods that are acceptable for the construction of state highway projects under the supervision of the Utah Department of Transportation. Supporting documentation such as construction forms, Standard Specifications, Supplemental Specifications, Standard Drawings and Policies are for viewing purposes only. The latest versions can be accessed through UDOT's web site at http://www.udot.utah.gov

The manual was designed to correlate with the Standard Specifications. It was neither developed as, nor does it establish a legal standard for these functions. It does not have the force of the Standard Specifications and does not supersede the requirements of the Standard Specification.

The procedures, methods and guidelines herein are meant as a guide only and maybe modified and/or revised to better fit or take care of any given situation or circumstance.

The Construction Manual is not intended as a textbook of highway engineering, but rather as a reference. The manual is not a substitute for engineering knowledge, experience or judgment. It includes techniques as well as tables not ordinarily found in textbooks. These are intended as aids in the solution of routine field & office problems. It is essential that the user have a thorough understanding of the specifications as well as this manual.

Many of the guidelines herein contained are general in character and are not to be construed as replacing, modifying or superseding any of the provisions of the specifications, plans or contract.

In keeping with the idea that the Highway Construction Industry is an ever changing entity requiring constant re-evaluation of policy and procedures the, format was devised to provide for addition, change and elaboration of content without the necessity of republishing the entire manual. Each recipient of this manual is requested to suggest needed additions and changes. The suggestions should be submitted through the appropriate channels to the Headquarters Construction Staff. If revisions are necessary, they will be published and transmitted to the recipients of manuals, whose responsibility it shall be to post these revisions.

CHAPTER 1:
GENERAL PROVISIONS

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General

A. Purpose

This edition of the Construction Manual is prepared for the information and guidance, of those concerned with contract administration. It is to be used as a guide for uniform methods and procedures in construction surveying, construction inspection, and the preparation of records and reports necessary to provide quality assurance.
Problems will arise in connection with the construction work, which will not be covered by this Manual, but it does contain a lot of information that will serve as a valuable guide to personnel assigned to construction. It will not be possible to always adhere completely to all the instructions because of the many and varied field conditions that will be encountered during construction.
The Engineer should bear in mind that this Manual is not intended to be construed as altering, superseding, replacing, or in any way affecting the intent of the Plans and Specifications or Contract. It is instead, a book of reference and instruction to be used in the administration of construction projects.

B. Organization

The 1909 Legislature established the State Highway Department, which became the Utah Department of Transportation in 1975. The Department is administered under the direction and supervision of the Executive Director of the Utah Department of Transportation. An advisory commission exists which consists of seven members appointed by the Governor, known as the Transportation Commission. (U.C.A. 63-49)

1. Department Organization

The Utah Department of Transportation is the professional organization responsible for providing an efficient, safe, economical, balanced and coordinated transportation systems within the policy framework established by the Transportation Commission and under the direction of the Executive Director. The Transportation Commission is a part-time body that establishes broad policies regarding transportation systems through which the Executive Director's responsibilities are executed and funds programmed for transportation systems.
Acting with in the policies established by the commission the Executive Director takes the position of Chief Executive Officer of the Utah Department of Transportation. Overall supervision for Engineering is delegated to a Deputy Director who is assisted by various Divisions, each under a responsible Administrator.

2. Division of Construction

The Division of Construction is responsible for the administration of activities performed by private Contractors under contract with the Department including

engineering and layout, inspection for compliance with specifications, certification of quantities, estimates, and settling disputes.

Organization Chart

The construction engineering staff functions are under the direction of the Engineer for Construction & Materials. The Engineer for Construction & Materials coordinates and directs all construction engineering activities, Materials certification and testing programs for the Department and also acts as advisor and spokesman for the Department on matters of engineering policy.

3. District Organization

The State is divided into four Regions. The Region Director is the operational representative of the Deputy Director

State Regional Area Map

Region Director. The Region Director is responsible for all construction and related activities of the Department within their Region including, but not limited to:

- Proper staffing of construction projects.
- Final inspection and acceptance of completed projects.
- Effective handling of outside business and public relation contacts involving operations or personnel.
- Making recommendations for construction projects and establishing priorities for such work when approved.
- Making recommendations for proper equipment and supplies and securing the proper and effective use and maintenance of such equipment and supplies.
- Implementing employee and public safety policies and procedures.
- The Region Director is directly responsible to the Deputy Director, but must effectively cooperate with all Headquarters' Divisions, who speak on matters of design, construction, materials, right of way, maintenance, and other activities. In cases of difference of opinion, the Region Director may appeal directly to the Deputy Director for review of decision.

a) Region Construction Engineer

Among the Region Director's assistants is one assigned to contract administration and designated as Region Construction Functional Manager. The Region Construction Functional Manager is directly responsible to the Region Director. The position duties include.

- Managing personnel issues such as hiring qualified specialists, disciplining, providing training opportunities, allocating staff to Project Managers and evaluating personnel (annual performance reviews) under their supervision
- Responsibility for the non-project specific construction activities, signing project charters and for the quality of construction projects.
- Act as the regional expert to resolve technical construction problems that cannot be solved by Resident Engineers.
- Responsible for the construct ability process throughout the life cycle of the projects.
- Budget preparation and accounting. (Appropriations)
- Resource allocation of equipment and materials.

b) Region Project Manager

Project Managers work under the general supervision of the Region Director. The Project Manager is the project team leader and is required to plan, organize, staff, direct, control, modify, and stimulate the team to work as an integral unit and to accomplish the objectives of the project. Project Managers will be responsible for building project teams and managing the scope, schedule, budget, and quality of projects. Additional duties are shown in the following list.

- Design activities, interface, review and rework; Right-of-way, Roadway/pavement, Structures, Hydraulics, Materials, Environmental, Traffic signals and lighting, Utilities/permits, Landscaping.
- Estimate preparation
- Final plan package preparation - Special provisions
- Public Relations (project related) - Meetings – Hearings
- Performance measures and standards (project specific)
- Project development, accountability, and review -Scope - Schedule - Budget - Quality (QA/reviews)
- Review and approval of change orders (except on Local Government projects using Level I control)
- Project schedule and budget preparation and monitoring - Construction engineering costs
- Project progress monitoring and reporting
- Partial estimate payments

- Retainage release
- Consultant and contractor management
- Contractor rating
- Request preconstruction materials testing and pavement design
- Work with Resident Engineer to determine materials testing requirements
- Design review activities (bid ability)
- Personnel evaluation input Review design study reports
- Schedule project review meetings
- Select consultants/conduct negotiations
- Review environmental studies
- Design assistance for construction - Redesign - Design interpretation
- Negotiation for resources
- Coordinate with other state and federal agencies
- Review right-of-way designs and documents
- Monitor right-of-way agreements in construction (compliance)
- Review design study reports
- Prepare concept report
- Prepare scoping report

c) Resident Engineer

Operating under the general supervision of the Region Construction Engineer and the Project Manager is the Resident Engineer who is the Department's representative on the project. The general duties and responsibilities of this position are as follows:

- Supervises and directs the activities of all personnel involved in the construction of one or more projects in accordance with the requirements of the plans and specifications.
- Spot-checks all phases of the work periodically and checks the activities and performance of their personnel on a day-by-day basis to assure the work is progressing satisfactorily and on schedule.

- Maintains close contact with the Contractor's representative to insure that testing, and inspection is maintained with the Contractor's work schedule.
- Misunderstandings that may arise need to be addressed before becoming problems. If not immediately resolved, escalate decision to the Region Construction Engineer or Project Manager.
- Confers with public officials, utility owners, other agencies and the general public as necessary to make certain their interests are considered in planning work stages.
- Make certain that the contract work is performed in accordance with the contract provisions, and that all materials incorporated in the work have been tested and accepted by the proper authority. Be sure that progress and events are properly documented, that all records and reports are filed, and that the Departments interests are protected.
- Keep the Region Construction Engineer and Project Manager apprised of the construction work as it progresses, including unusual problems and any changes in plans or additional work requiring change orders.
- Train all personnel to perform their work safely.
- Prepare project reports, records and estimates. Conduct Preconstruction Conferences, and other duties as assigned by the Region Project Manager.
- Learns, understands and practices good partnering techniques. Works to insure partnering success.

d) Project Field Crew

Personnel will be assigned to the Resident Engineer to assist in the testing, inspection and documentation of the contracted work. Their duties are as follows:

- Directly responsible to the Resident Engineer but may work under the direct supervision of a Field Engineer, or one in charge of inspection of important or complex construction operations.
- Supervises and inspects operations, phases or stages of construction and material production operations. Keeps documentation records and makes necessary reports of these operations.
- Performs all calculations required in laying out interchanges, bridges, curves, grades, slope stakes or measurement of quantities.
- Inspects and samples materials, performs tests on samples, keeps records and prepares reports of these operations.

- Performs miscellaneous tasks, maintains records, project accounting, prepares reports, and performs other duties as directed by the Resident Engineer.
- Assists in determining and ensuring compliance with the contract requirements. Works as a partner with the contractor to insure project meets scope, schedule, budget and quality.
- Must understand UDOT safety standards. Adheres to all PPE/ Safe work requirements. Advises Resident Engineer of unsafe work practices of Contractor or Department personnel.

C. Relations

1. General

The Construction personnel of the Utah Department of Transportation are in daily contact with, and under the critical eyes of a large number of citizens; and, as a public service organization, the Department is judged by it employees as well as by its work. Every employee should bear in mind that they have a definite responsibility to build good will toward the Department.

2. General Public

Courtesy is a prime requisite of every employee. This applies to answering questions and accepting criticism or suggestions. Some questions which employees may think simple or elementary may be of great importance to the person asking the question. Our minds should not be so closed that we cannot listen to what is being said. By listening with an open mind, we sometimes find that we have overlooked a detail obvious to others not as close to the work.

Whenever you can answer a factual question, do so. If the question is a matter of policy or concerns information you do not have, take the matter to your supervisor. Never let a question, a suggestion, or a criticism go unheeded. Follow through on such matters until the persons have a satisfactory answer.

On occasion, a construction project may be especially difficult to supervise and may create temporary inconvenience for the local people and the traveling public. Such situations and problems may possibly be handled with considerable private and public contact work, including release of information through the local news media.

These outlets are ordinarily quite happy to be of service in this regard. The Office of Community Relations will give assistance, upon request, in designing such a program for public information.

In case of contact with newspapers, radio or television, the Resident Engineer should furnish information on matters for which they have personal responsibility and are well informed. Questions concerning policy or programs should be referred to the Region Public Information officer, Project Manager or Director.

If conditions are observed that might develop into public controversy and misunderstandings, this information should be transmitted through channels so that

early news releases can inform the public of the facts. It is important that information given to the public not be slanted or evasive.

Complaints received from the general public are for the most part referred to the Region Project Manager or Resident Engineer most familiar with the situation. Be prompt in contacting the complainant.
To delay in the hope that it will "cool down" may only add more fuel to the fire if the complainant feels they are being ignored. It is best to talk personally with the person making the complaint; often, it is just something they want to get off their chest. Listen, and above all, be courteous. If you can make a decision on the matter, advise the person what can be done and when; and prepare a brief memo advising all interested persons as to how the matter was concluded. If the matter cannot be decided, inform the complainant that their problem is beyond your authority. A brief should promptly be prepared reporting the situation and forwarded through channels.
Never lose you temper or your composure.

3. Adjacent Property Owners

Before contract work starts on a project, the Resident Engineer should try to advise affected property owners of the planned construction and discuss with them the probable effect the contract work will have on their operations so that they have an opportunity to arrange their operations before the work affects them seriously.
If individual contact is too great a job, a group meeting could possibly be arranged. This consideration for the individual will improve the attitude of the general public toward the Department.

Trespassing on private property exists when others have not consulted the owner of the property prior to action on the property. Before work of any kind begins on private lands, the owners of these lands should be contacted. Seldom will owners deny access when they are informed as to the purpose of the work and assured that no damage to their property will result. After making this assurance to the owner, the employee should advise the contractor to work carefully to prevent any damage.

4. Local Officials

County and City officials frequently manifest a great deal of interest in construction performed in their county, or city, whether it be county, city, state or federally financed. Whenever such officials visit the project, the Resident Engineer and their assistants will be courteous to them, answer their questions and explain in detail those phases of construction relative to their inquiries. Through acts of courtesy and an attitude of due respect, the Resident Engineer often may obtain information which will be of material value to their supervision of the work. Suggestions by local officials as to change in the work are to be listened to attentively.

Obtain all the facts and give a suitable explanation when it is evident that their suggestions are not feasible. No commitments are to be made other than that their suggestions, if warranted, will be referred to the proper officials for consideration.

5. Utilities

Good public relations will have a beneficial effect in dealing with utility companies. The Resident Engineer will be working with the companies to facilitate the removal, protection or relocation of existing utilities. The relationship should be one of mutual cooperation and consideration. The Resident Engineer is urged to make personal contact as soon as possible with officials of the utility company in charge of the department with which they will be dealing. A representative of any affected utility should be invited to the Preconstruction Conference. This will tend to create good relations and give the companies as much time as possible to perform their work.

6. Contractor

Proper relations between the Contractor and Department personnel are of the utmost importance. In establishing and maintaining the desired "partnering" relationship, Construction Department personnel should abide by the following guidelines:

a) Inspection personnel must treat the Contractor fairly

b) The first responsibility of the Resident Engineer and their personnel is that the plans, specifications and contract requirements should be adhered to as close as possible.

c) Maximum integrity of all personnel is essential in order that public confidence may be maintained in the Department.

d) Every reasonable effort should be made to maintain harmonious relations with the Contractor and their employees, however excessive fraternization should be avoided.

e) Do not discuss the Contractor’s methods of handling the work with outsiders and competitors.

f) Do not put yourself under obligation to the Contractor or their personnel.

g) Be ready to advise the Contractor when requested, but avoid snap decisions. Do not assume the duties and responsibilities of the Contractor.

h) Refrain from heated arguments over disputed matters. Matters that cannot be resolved peacefully should be referred to higher authority.

i) Instructions relative to the work are to be issued to the Contractor, their superintendent or foreman, not to workers or subcontractors on the project.

j) Suggested changes or instructions issued pertaining to the work should be, for the benefit of the project, based on sound judgment and supported by the specifications. A written record should be maintained of specific orders issued.

The Resident Engineer and their forces should try to anticipate the needs and difficulties of the Contractor. Discuss the Contractor's schedule with them and coordinate the testing and inspection accordingly.

7. Inter-department Relations

Cooperative working relations among all employees of the Department are most important. Understanding the functions and problems of other divisions, as well as the manner in which they fit into the overall organization, will improve the teamwork within the Department. Each employee has a responsibility to promote and foster good relations with their fellow workers. An employee is expected to carry out the instructions of their supervisor. Supervisors should conduct themselves in such a way as to earn the full support, respect, and cooperation of those employees for whom they are responsible. Each employee must know their responsibility and must have the authority to handle it. A major factor in promotion of good working relations is to keep your supervisor fully informed about all pertinent events that happen for which your are responsible. This principle applies equally at all levels of authority.
The Resident Engineer should brief their assistants on plans and schedules for work immediately ahead.

8. FHWA

The role of the Federal Highway Administration in relation to federally financed highway construction is to approve, disapprove or require modification or revisions in State Highway proposals for construction to the extent as to be able to certify to Congress that the State projects have in fact been constructed as originally proposed and approved in accordance with established agreements, before such Federal-Aid funds may be disbursed to the State. This relationship involves only the FHWA and Department and does not directly involve the Contractor. In effect, the Department has a contract or project agreement with the FHWA that the Department will construct a project in accordance with approved Plans and Specifications. FHWA representatives, when in the field and inspecting projects constructed with Federal-Aid funds, are on the project for the purpose of reviewing the Departments performance in causing the project to be constructed in accordance with the approved Plans, Specifications and established agreements. The FHWA representative has no responsibility or authority to direct or supervise the Contractor's work or to give directions, either oral or written, to the Contractor.

Any significant recommendations or findings as to job procedures or contract performance should be directed by FHWA representatives to the attention of the Department or Headquarters' Construction staff as appropriate.

Policy & Procedure Manual - Procedure 08b-10.1

All alterations or revisions to the contract should be discussed with the FHWA representative during their periodic inspections, especially those which can best be discussed and explained on site. The revisions are to be formalized by execution of a contract change order.

It is desired that all contemplated changes, whether major or minor in character, be called to the attention of the FHWA representative at the earliest date coinciding with their visit to the project or when information on probable changes is available. It is recognized that the need may occasionally arise for making a change on relatively short notice. In such cases, "Authorization to Proceed" (Change Order C107) should be initiated, by telephone if necessary, and verbal authorization obtained prior to the Contractor executing any work on the change. Written authorization should be obtained as soon as possible.

9. News Media

Good relations with the news media are a great help in establishing and maintaining good public relations. Local reporters are usually well known to residents in the area and can have a significant influence on attitudes of local road users, business owners and residents along the project route.

An atmosphere of mutual confidence between the Department and the news media should be developed so the media feels confident the information given to them is correct and complete, and so they understand we expect their reporting to accurately reflect the situation.

The media should be informed early about the nature of the project work and the proposed scheduling. They should be kept informed of significant changes occurring during the life of the project. Invite the media to public meetings. Supply them with current information about schedules, alternate routes and major construction details.

Department personnel may answer, within their area of competency, all questions from the media relating to the project or to the program under which it is being constructed.

Information should be presented to the media in an easily understandable form with technical terms held to a minimum. Remarks should be confined to factual statements. Do not offer personal comments about Department policies, supervisors, co-workers, subcontractors or the Contractor, and politely turn aside all questions on those subjects.

The Department's Office of Community Relations was created to care for numerous requests by individuals and others for transportation related information and to promote good public relations by other means of publicity. The Community Relations Director disseminates important news happening and schedules to newspapers, periodicals, and radio and television stations by news releases to inform the public about current highway developments.

10. Other Public Agencies

Requests may be received from other public agencies for assistance in engineering or related work. These requests should be given due consideration and not passed off as nuisances.

Project Engineers should see that personnel under their supervision maintain a close working relationship between the Department and other public agencies. Measures should be taken as necessary to furnish services and maintain a relationship above criticism.

D. Equipment

1. Engineering Equipment

When engineering equipment is assigned to an individual, they become personally responsible for its care and condition.

The materials testing equipment used by the inspectors and lab personnel are precise instruments and are expensive. The retention of their value and the results of the work depend, to a large degree, upon the proper care and functioning of this equipment. Any person who does not, at all times, show proper regard and care for the instruments should not be permitted to handle them.

Transporting an instrument to the work site is often more detrimental than the use it receives after arriving on the job. Proper housekeeping habits in the vehicle, following the rule, "A place for everything and everything in it's place," will tend to protect engineering equipment, reduce frequency of replacing worn out equipment and prevent loss.

All equipment should be checked at frequent intervals to insure maintenance of required accuracy. Minor adjustments may be made only in accordance with the manufacturer's recommendations and prescribed procedures. A competent and experienced person will make adjustments.

Equipment such as axes, sledgehammers, picks and hatchets should also be checked frequently.

Field office equipment, such as computers, calculators, adding machines, etc., should always be covered when not in use. Survey instruments and testing equipment should be kept in their boxes in a safe place.

Laboratory and field-testing equipment must be kept clean, handled with care and kept in good working condition. Tests performed by this equipment have an important role in the control of materials, and any equipment that is damaged or worn out should be replaced.

Instruments should not be exposed to rain, snow or rapid changes in temperature. They should not be unnecessarily exposed to intense sunlight. A hood should be used in emergencies to protect them from weather until they can be put in their cases. Care should be exercised to see that the instrument is kept as nearly at a uniform temperature as possible. An instrument should not be taken suddenly from outside freezing weather into a heated room.

Resident Engineers are charged with the responsibility and care of all equipment used by employees under their supervision. In cases of inexcusable or avoidable accidents, punitive measures or disciplinary action should be assessed to the employee directly responsible for the damage. All accidents of any consequence involving damage to equipment must be fully and promptly reported to the Region Construction Engineer, who should review the facts in each case and determine the responsibility and disposition of the repair or replacement charges.

2. Vehicular Equipment

Policy & Procedures Manual - Policy 06b-1

Remember that all Fleet -owned vehicles are public property. You, as operator, are expected to set a good example by:

a) Observing all traffic laws;

b) Practicing courtesy in driving;

c) Maintaining all safety devices in operating condition;

d) Keeping vehicle properly serviced and cleaned as provided by Department policy.

The Resident Engineer should make periodic checks to determine that each employee operating a motor vehicle in the performance of their work is complying with requirements concerning that vehicle.

E. Safety

1. General

Policy & Procedure Manual - Policy 05d-2

The Resident Engineer is charged with the responsibility of providing safety leadership at all times and safety enforcement when necessary. They should give thorough instructions to employees under their jurisdiction on the safe use of tools, materials, equipment and the safe prosecution of the work. They should see that all Department employees on the project wear a hard hat and other appropriate personal protective equipment when in construction and/or hazardous areas.

Construction equipment used on today's highway construction projects is getting bigger, heavier and faster with the passage of time. With this increase in size and speed of operation, the degree of hazard goes up proportionately. Safety measures and practices must keep pace. Safety is everybody's business. The primary responsibility of your safety lies with you, the individual. Accidents may result in loss of life, permanent disability, pain and suffering, economic loss to the individual and employer and rising insurance rates. Cooperation in safety programs is the mutual obligation of every employee. In view of this, each employee should endeavor to:

a) Work safely on or off the job.

b) Realize your actions may cause accidents or injuries.

c) Have regard at all times for the safety of others.

d) Use knowledge and influence to prevent accidents.

e) Contribute ideas and suggestions for improvement of safety.

2. Vehicular Traffic

Fleet owned vehicles - The operators of State-owned vehicles should be aware of their responsibility, not only to their employer, but to the traveling public in general. They should operate the vehicles in a safe and courteous manner and obey all traffic laws.

The operator must have a valid driver's license in their immediate possession and it must be current as to place of residence and otherwise comply with renewal requirements.

Drivers should use good driving habits and practice recommended safety rules. The public easily identifies state-operated vehicles and poor driving habits will not be tolerated.

The following is a list of some of the causes most frequently found in accidents involving Fleet owned vehicles:

a) Following to close.

b) Improper backing.

c) Driving too fast for existing conditions.

d) Improper entry into traffic flow.

e) Faulty equipment on vehicle.

3. Crew Safety

Working in traffic - In areas where all but the local traffic has been detoured, construction signs and barricades afford some protection to employees working within project limits, provided construction is in progress and restricted travel conditions are evident.

Survey work on a highway that is not restricted to traffic requires that adequate warning to motorists be provided. The motorist must be informed that the crew or other persons are working on the highway so they will know what to expect. Portable warning signs, arrow boards and cones are available for that purpose and each crew must have a set on hand, and use them whenever working in traffic. The signs should be placed at a distance from the work adequate to permit the motorist opportunity to slow down or stop safely if necessary. The signs are ordinarily placed on the road shoulder in each direction from the crew and moved ahead as the survey work progresses. Instruments set up in the roadway must be protected. Warning signs are effective only if they tell the correct story. Under no conditions should these signs be left in place overnight or for periods when work is not being performed in their vicinity.

Flaggers should be used only when conditions are especially hazardous due to heavy traffic, restricted sight distance or other reasons.

Whenever work is being performed within the traveled portion of the highway, along with all items of safety equipment considered necessary, each member of the party must remain alert for possible danger at all times. When conditions are extremely noisy, extra precautions should be taken.

Unless vehicles are used as an aid in warning traffic, through use of mounted signs and flashing lights, they must be parked off the roadway. This may require parking the vehicles some distance from the work. When conditions permit, the vehicles should be parked far enough from the edge of pavement to provide clearance of at least 30 feet.

Periodic inspections should be made by supervisory personnel to determine that all employees are making proper use of protective devices.

Ground level operations - Schedule work when possible, to minimize being in areas where heavy equipment is used or where operations are concentrated in a relatively small area.

Before entering an area for purposes of inspection or performance of work, be assured that the area is safe. For example, trenches 5ft. or deeper should be properly shored and braced. Likewise, it would not be safe to enter upon a roadway to perform a task requiring undivided attention when noisy, heavy equipment is being operated nearby unless safety provisions are made such as having another person nearby acting as a lookout, etc.

All employees working in the vicinity of bridge construction, pile driving, pipe laying or other operations involving the use of cranes or draglines should use extra precautions.

Never walk under any load suspended by a crane or dragline, and remain a safe distance away from cables that are under heavy load. Remain a safe distance away from a crane or dragline working the vicinity of a power line.

Above ground operations - Employees working above ground should be aware of additional hazards related to height and the limited working area. Individuals should never be required to work at high elevations if they are adversely affected by height. Workers may not work within 6ft of an edge, which is 6ft above a lower level without fall protection. (See UDOT Construction Safety Manual) They should be appropriately dressed in regard to hard hats, safety shoes, cuff-less pants, etc. Care should be used in ascending and descending ladders. Extreme caution should be exercised on windy days. When working over water, life jackets and/or safety belts may be required. Bridge Contractors are required by OSHA to install safety nets when workers must be in excess of 25 feet above the ground if the use of catch platforms, temporary floors, safety lines or safety belts are impractical.

Processing plants - Concrete batch plants, asphalt plants, pre-stressed concrete yards, etc., present many hazards such as moving machinery, vehicular traffic, overhead operations, ladders and stairs and various hot materials. The continual high level of noise compounds the seriousness of the hazards. Hard hats should always be worn and extra precaution taken when working in these areas.

4. Accident Reports

Personal Injuries - A Department employee suffering a personal injury because of an occupational accident, must immediately notify their supervisor. If the employee is unable to complete the required reports, it is the responsibility of the immediate supervisor to complete the forms in a timely manner.

Vehicle accidents - Accidents involving Department Employees and vehicles must be reported promptly. In accidents involving other vehicles, the employee and the other vehicle's operator are required to exchange names, addresses, description and license number of their vehicles, the name of the owner of each vehicle and the name of the insurance company covering each vehicle. No other information should be given unless requested by a traffic or police officer at the scene.

Employees should not discuss facts and conditions relating to the cause of the accident with the driver of the other vehicle and they should not admit any liability for the accident. All inquiries and attempts at settlement from the adverse party should be referred to the proper local authorities.

Immediately notify the dispatcher by radio (Regional or Central) or contact the Region/District Safety Loss Control Manager by telephone giving all details of the accident. Report the accident to the local law enforcement agency.

The FHWA has issued an Alert Bulletin Procedure for accidents, which meet the following criteria.

a) Accidents/incidents causing multiple fatalities, numerous injuries or significant property damage resulting from fire, explosion, or the release of hazardous materials, which necessitates the evacuation of the immediate area, and the closing of roads, streets, or highways.

b) Highway accidents involving the deaths of five or more persons.

c) Any accident involving a school bus, which results in fatalities and/or disabling injuries.

d) Any incident that causes a major highway to be closed for more than 24 hours, except for closures (maintenance, construction, etc.) where the public has been notified in advance via newspaper, radio, or television announcements.

e) Any incident that causes major damage to highway facilities.

f) All bridge failures or closures. (Please advise if the closure resulted from bridge inspections.)

g) Any incident in which more than 10 vehicles are involved regardless of the number of fatalities, injuries, and the length of time the highway is to be closed. When there is an occurrence of one of the above listed incidents rapid notification of the Region/District Safety Loss Control Manager and the FHWA is required.

5. Accident Prevention Meetings

Resident Engineers should hold adequate weekly safety meetings with their crews. Direct questions about safety issues, project insurance, workers compensation or any issues concerning contract from Attorneys or Insurance Companies to the UDOT risk manager.

Definitions and Terms

The Standards Specification 00570 interprets the intent and meaning of abbreviations and definitions of terms most commonly used in connection with highway construction projects under the supervision of the Utah Department of Transportation. These terms should be used in all reports and correspondence relating to such projects. Additional acceptable terms and definitions are included in current publications of the American Association of State Highway and Transportation Officials (AASHTO).

Bidding Requirements and Conditions

This section of the State of Utah Standard Specifications 00120 establishes the conditions under which, bids are accepted by the Department. 00120, establishes the Contractor's personal responsibility for knowledge of job conditions and familiarity with

plans and specifications. The Resident Engineer should be aware of the contents of this section.

The Resident Engineer or their representatives should accompany bidders over the project if requested. The basis of information supplied should be the same for all interested parties. Care should be exercised in advising as to the character or amount of material, which may be encountered. Any stated or implied changes, procedures, etc., may prove either costly or embarrassing at a later date.

Award and Execution of Contract

This section of the State of Utah Standard Specifications 00515 outlines the procedures and obligations involved in award of the contract to the successful bidder.

The Resident Engineer should know that these conditions have been met when they receive an executed copy of the contract or an official notice that the Contractor may proceed with the work.

Scope of Work

Conditions under which changes may be made within the scope of the contract are established in the State of Utah Standard Specifications 00725. It also establishes the Contractor's and the Department's obligations with respect to maintenance of traffic. The Resident Engineer should be alert to special problems involved in traffic handling and make recommendations through the Region Construction Engineer or Project Manager to the Region Director when changes appear justified.

A. Differing Site Conditions

If a Contractor indicates to the Resident Engineer that "changed conditions" as prescribed by the Standard Specifications 00725 have been encountered, the Resident Engineer should alert the Contractor to serve written notice and not to disturb the condition until the Department has investigated the condition. The Region Construction Engineer or Project Manager should be notified immediately of the condition so that arrangements can be made for prompt investigation and decision as to the validity of any claims for extra compensation the Contractor may submit. The Resident Engineer should keep complete records of all matters relative to the condition to assist in the investigation and for use in considering any claims that may arise from the condition involved.

The Standard Specifications also provide for a decrease in the costs or time to perform the work because of "changed conditions". The Resident Engineer should be alert to such circumstances and follow the same procedures as outlined above.

B. Significant Changes in the Character of Work

As the Department's representative, the Resident Engineer should be assured that the project meets all contract requirements. The Resident Engineer should expect to

obtain no more than what is specified or accept any less than the contract requirements. When Special Provisions or Specifications are unworkable, or major alterations of plans appear necessary, conditions should be investigated and recommendations promptly submitted to the Region Project Manager, who in turn should contact the Construction Division for input to the solution to the problem. In no case should the Resident Engineer attempt to change the specifications, or relax the specification requirement for the particular project without approval from the construction division and/or an approved contract modification. See Standard Specification 00725 for more information.

When unworkable Specifications or Special Provisions, along with suggested remedies, are brought to the attention of the Construction Division, that office will coordinate with the FHWA, in accordance with established agreements, as necessary and arrive at a remedy to the problem that can be applied to all projects. In most instances, a Change Order to effect the change will be required once the Department and FHWA have agreed on a course of action. Until that time, the Resident Engineer cannot relieve the Contractor of the requirements contained in the Special Provisions and the Standard Specifications. The Construction Division approves all specification changes by change order.

C. Environmental Protection

Standard Specification 01355

The Department is committed to minimizing adverse environmental impacts resulting from our projects. The specifications for environmental protection are ultimately the responsibility of all department employees to enforce. This should be done by knowing where to get information, knowing how to read product labels, how to identify possible environmental hazards and knowing when and how to warn others about hazards if they should occur.

When hazardous conditions or a violation of these specifications are observed on a construction project, the Resident Engineer or inspector should promptly call the Contractor's attention to the condition and request that it be corrected. If the condition is not promptly corrected, contact the Region Project Manager and Loss Control Safety Manager. They should notify the Contractor in writing of the violation and demand immediate correction. Where the violation is flagrant or a substantial hazard exists, work under the contract will be suspended.

When the Contractor's personnel or the Department's project personnel encounter any underground storage tanks, leaking storage tanks, suspected hazardous materials or hazardous wastes during construction operations, the work in the immediate area should be suspended, and the Resident Engineer notified. Work may continue in other areas of the project where health and safety is not at risk. It is the Resident Engineer's responsibility to make the Department's project personnel and Contractor's personnel aware that they must be notified when potentially hazardous materials are encountered.

The Resident Engineer should inspect the impacted area to gather site-specific information. If the Resident Engineer finds the site presents potential danger, the area should be secured. Security may include fencing, signing, and blocking off the area. The Region/District Safety Loss Control Manager should be notified immediately. Also, be sure to notify the Departments Industrial Safety Specialist in Loss Control.

D. Discovery of Historic Objects & Artifacts

Standard Specification 01355

It is in the public interest to preserve for public use historical and prehistoric objects such as Indian ruins, sites, buildings, artifacts, fossils, or other objects of antiquity that may have significance from a historical or scientific standpoint. On a construction project when it appears that significant historic, or prehistoric, objects have been or are about to be encountered, the Resident Engineer should immediately take steps to preserve them and immediately notify the Region Project Manager. The Region Project Manager should advise the appropriate authorities within the Department of the facts and permit them to inspect the site for the purpose of determining the advisability of salvaging the objects.

E. Environmental Clearance by the Contractor

Standard Specification 01355

It is essential during the entire life of the project, for the Resident Engineer to be alert to violations of this specification.

The Contractor is expected to assure the work does not encroach on or directly effect abutting highway right-of-way before securing specified environmental clearances.

If violations do occur, the Resident Engineer should order the Contractor to cease the work operation, remove all encroachments and restore the area to its prior condition as nearly as practicable.

F. Value Engineering Proposals by the Contractor

Standard Specification 00725 encourages the Contractor to submit written proposals to the Department for cost and time reductions to the original contract.

Before incurring the time and expense of developing a written proposal, the Contractor is encouraged to present the idea to the Resident Engineer for informal screening, although this step is not required. The purpose of the value engineering proposal is encouragement of innovative ideas involving improved work methods, new products and improved equipment procedures, all resulting in significant cost savings and an end result of equal or better quality than could be attained if the idea was not implemented. The Resident Engineer should review the proposal for these qualities.

All costs incurred by the Contractor in developing the proposal, including preliminary plans and estimates, are the sole responsibility of the Contractor and are not compensated.

Formal screening of the written proposal will be done in the Region. If acceptable, the Resident Engineer should prepare a change order. Coordination between the Value Engineering Manager, Construction Division, and Preconstruction Division is required at the time a proposal is being reviewed, to determine if the idea was considered during project development and rejected, or if it has been accepted previously by the Department. Accepted proposals and the idea behind them become the property of the Department for possible use on future contracts. To avoid duplication, the Construction Division will maintain a record of cost-reduction proposals that have been accepted and distribute them.

Control of Work

A. Construction Management Standard Operating Procedures (SOP)

1. Introduction

The Department is interested in developing consistency and accuracy in Contract and/or Construction Management. Construction Management is the process of insuring the work done by the Contractor meets all the requirements of the contract including scope, schedule, budget, quality, and safety. It is documenting each item of the contract in accordance with the requirements of the Standard Specification, Special Provisions, Plans, Minimum Testing Requirements and Manual of Instruction. To insure consistency in the process, Standard Operating Procedures have been developed and approved through a partnering effort by the Department and Federal Highway Administration (FHWA). The Standard Operating Procedures outline the process for Federal Aid Stewardship and Non-stewardship projects and State projects that will provide accurate and complete documentation and insure the work is completed in compliance with the Plans and Specification.

2. DEFINITIONS

- **Assignment Order**: Document prepared by the Central Construction Division and signed by the Director for Construction and Materials giving the Resident Engineer the authority to administer the project.
- **Deficiencies**: Items of documentation, material testing or inspection that do not meet the minimum requirements specified in the Plans, Specifications, Minimum Testing Requirement and/or the Manual of Instructions.
- **Detailed Estimate:** Estimate prepared from the bid amounts provided by the Contractor in the bid proposal.
- **Final Estimate Packet:** Packet of information required by FHWA for final acceptance from The UDOT Construction Division when the project has been

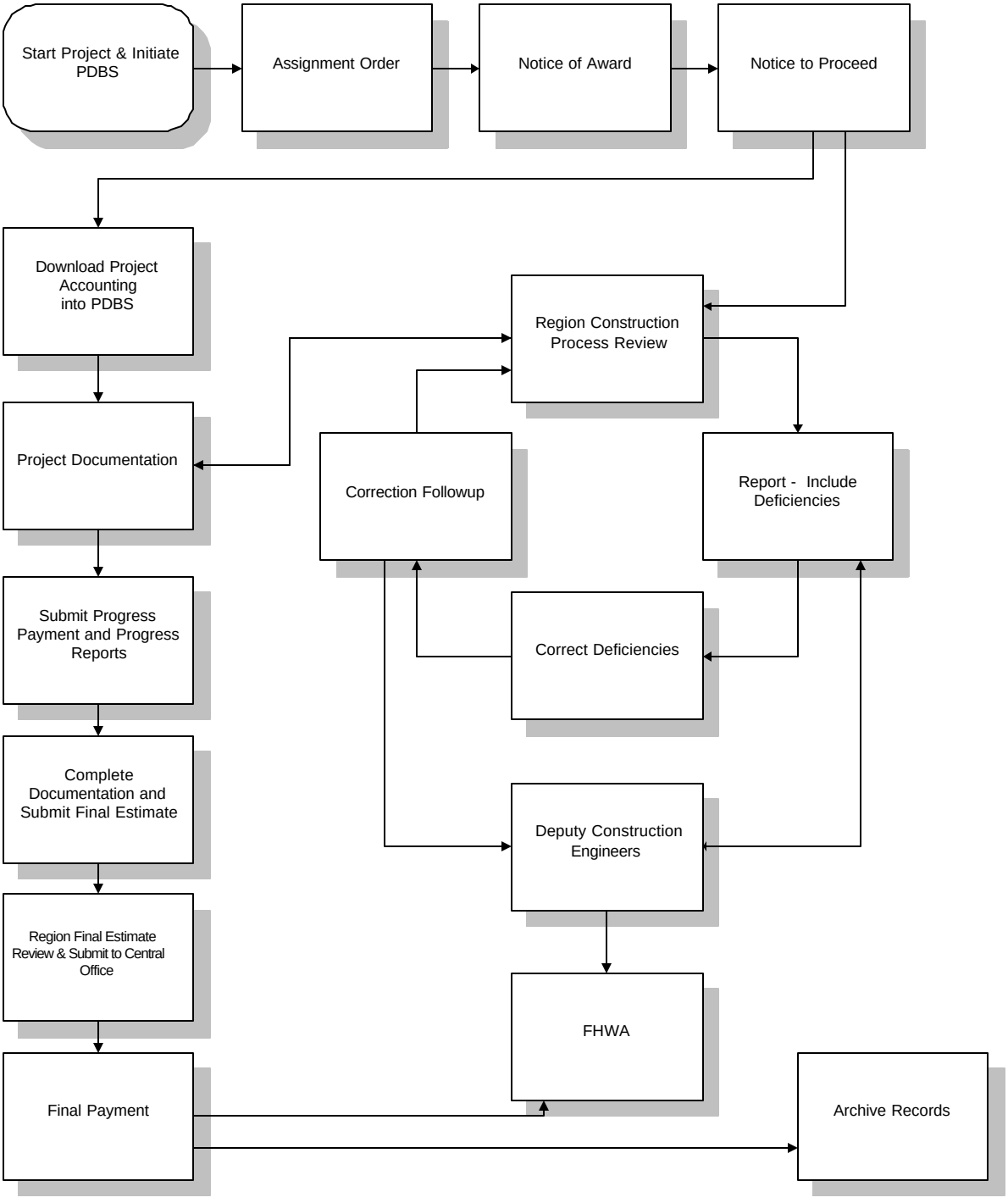
completed and the final estimate has been paid to the Contractor. The packet contains the following. UDOT Letter of Acceptance, Report of Assemble (form C128), Materials Certification (form C196), FHWA-47, Final Estimate, Overrun & Underrun Statement, DBE Certification summary (when required) and Final Inspection Items Resolved.

- **Final Inspection:** The Region Review Team along with the Project Manager will be responsible for conducting a Final Inspection on every project when project is 100% complete. Notice of Acceptance and Final Report will be sent to the Director for Construction & Materials.
- **Final Voucher:** Final approving document of a federally funded project. Final Voucher is produced by UDOT's Comptroller's office showing a summary of all costs for the project. Voucher is sent to FHWA for signatures and approval and returned to UDOT with a copy forwarded to Central Records for the project files.
- **Notice of Award:** The Construction Division prepares the Award Notice to be sent to the Contractor for signature, insurance and bonds when the concurrence approval is received from FHWA.
- **Notice to Proceed (NTP):** Written notice to the Contractor that their Contract has been approved and they can proceed with work on the Project.
- **Partial Estimate:** Contractor pay estimate prepared and approved by the Resident Engineer to pay the Contractor for work completed during the progress of the project.
- **Progress Report:** Monthly report prepared by the Resident Engineer that shows the progress of the construction project.
- **Project Development Business System (PDBS)**: Central Data Base that contains all the data necessary to manage the project including scope, schedule and budget from initial scope to completion of construction.

3. FLOW CHART

See Figure 3-1, for the Construction Management Standard Operating Procedure process flow chart.

FLOW CHART FOR STANDARD OPERATING PROCEDURE FOR CONSTRUCTION MANAGEMENT



4. FLOW CHART TASKS

a. Start Project & Initialize Project Development Business System (PDBS):

During the Planning Phase, when the Project receives authorization: Planning initializes PDBS with the project number, authority number, brief project description, project name, and preliminary cost estimate.

b. Issue Assignment Order:

Prior to the Scoping meeting, the Region Construction Engineer will assign a Resident Engineer to assist the Design Engineer in the constructibility reviews of the Project during the Planning and Design Phases.

Prior to Advertising, the Project Manager contacts the Region Construction Engineer receiving the name of the Resident Engineer to be assigned the project. The Resident Engineer, assigned by the Region Construction Engineer, may or may not be the same as initially assigned. The Construction Division will assign a Deputy Construction Engineer to the Project. The Construction Division prepares the Assignment Order and distributes to UDOT as needed.

c. Issue Notice of Award:

Following Bid Opening, the Construction Division and the Project Manager will prepare and review for approval the abstract of bids and detailed estimate. Office of Right-of-Way submits a copy of the approved Right-of-Way Certification. Program Development submits a copy of the R-709. Civil Rights Section reviews and approves the DBE commitment. The Construction Division will submit Concurrence request with attached copy of Right-of-Way Certification, R-709, DBE Commitment approval, and approved abstract to FHWA for approval for Non Stewardship projects. The Construction Division will print the contracts and prepare the Award Notice to be sent to the Contractor, insurance and bonds when the Concurrence approval is received from FHWA.

d. Issue Notice to Proceed:

Upon receipt of signed contracts, insurance and bonds from the Contractor, the Construction Division will issue the Notice to Proceed signed by the Deputy Director of Transportation.

e. Download Project Accounting into PDBS:

The Construction Division will initialize Project Accounting by downloading unit bid prices into PDBS.

f. Project Documentation:

The Resident Engineer and crew provide the documentation for the project in accordance with the Plans, Specifications, and Manuals of Instruction for Construction and Materials.

g. Submit Progress Payment and Progress Reports:

The Resident Engineer submits Progress Payments to the Construction Division monthly. The time and date of receiving the Progress Payment and Progress reports are entered into PDBS.

h. Complete Documentation and Submit Final Estimate:

When the Contractor has completed all work at the project site and all paperwork has been submitted to the Resident Engineer, the Resident Engineer's crew completes all Project Documentation and submits to the Region within 30 days from the date work was completed.

i. Region Final Estimate Review & Submit to Central Office:

The Region reviews the Project Documentation to insure it is complete and has been done in compliance with the Manual of Instruction. The Contractor approves the final quantities before the estimate is closed. Region submits the final estimate to the Construction Division within 60 days after the Contractor has finished the work.

j. Final Payment:

The Construction Division will log the final estimate, complete the final pay estimate and submit to the Contractor for approval. After receiving the final pay estimate with the Contractor's signature, the Construction Division will submit for final payment, provide final estimate packet to FHWA for Federal-aid Non Stewardship projects and send project records to Central Records for archiving.

k. FHWA (Non stewardship projects):

Approves projects for awarding prior to NTP. Receives oversight reports and the Final Estimate Packet. Reviews and approves Contract Modifications. Conducts construction inspections. Signs off on Final Voucher Report.

l. Archive Records:

Central Records receives a copy of the signed Final Voucher from Comptrollers office to be placed in project files. Central Records keeps entire project file for 3 years from date Final Voucher is signed. After 3 years, final packet documents will be microfilmed. All field books will be kept on file at Central Records.

m. Region Construction Process Reviews & Final Inspection: Form C-120

On a Bi-Monthly basis, the Deputy Construction Engineer, along with the Region representatives, will review a Resident Engineers records and field work in accordance with Procedure 08B-28. The review team will consist of the Region Construction Engineer, Region Contract Specialist, Region Materials Engineer and others as needed. They will use the Region Construction Process Review and will file a report (C-120) with copies to the Resident Engineer, Region Construction Engineer and Director for Construction and Materials. Any deficiencies found will be listed in the C-120 report, along with suggested corrective action and time frame for correction. A follow up C-120 report to determine if deficiencies were corrected will be conducted at the end of the time frame given in the original report. The Region review team, along with the Project Manager, will be responsible for conducting a Final Inspection on all projects. (See: Region Construction Final Inspection Guidelines, Appendix A) Notice of Acceptance and Final Report will be sent to the Director for Construction and Materials.

n. Review by Deputy Construction Engineer: Form C-194

The Deputy Construction Engineer will receive a copy of the Region Construction Process Review from the Director for Construction and Materials. The Deputy Construction Engineer will review the report and note any items that need to be corrected. A copy of the report will be sent to FHWA. The Deputy Construction Engineer may conduct a follow-up review, on an as needed basis, anytime during the life of a project.

The review will consist of following up on any deficiencies determined during the Region Construction Process Review, spot checking project documentation, test reports, field work being done by the Contractor and compliance with contract specifications. The Deputy Construction Engineer will prepare a report with copies to the Resident Engineer, Region Construction Engineer and Director for Construction & Materials and FHWA.

o. Correct Deficiencies:

All deficiencies noted on C-120 or C-194 Reports will be corrected by the Resident Engineer's crew. The report will include requested corrective actions and time frames for correction of the deficiency.

p. Corrections Follow-up by Reporting Entity:

The Region Construction Engineer, will follow-up on any deficiencies noted on the C-120 or C-194 reports to assure that the corrective action has been completed. If the deficiency has not been completed, the Region Construction Engineer will note what corrective actions has been completed to date and may issue a new completion date. A copy of the report will be sent to the Resident Engineer and Director for Construction & Materials.

5. REPORTS

Each review conducted by the Region Review Team, Deputy Construction Engineer, or FHWA will be documented and reported. Reports will be kept in the project file and will provide documentation that the project meets the minimum requirements and quality specified in the Plans and Specifications. The reports will be, used by the Department and FHWA to assure compliance with Federal laws and regulations and for final acceptance.

6. DESIRED RESULTS

It is the desire of the UDOT to develop consistency and accuracy in Contract and Construction Management. The consistency will insure work done by the Contractor and UDOT Project Crew meets all the requirements of the contract including scope, schedule, budget, quality, and safety. The consistency developed will insure each item of the contract is documented in accordance with the requirements of the Standard Specification, Special Provisions, Plans, Minimum Testing Requirements, Policy O8B-28 and the Manuals of Instruction for Construction and Materials. These Standard Operating Procedures outline the process to be followed, which will generally provide accurate and complete documentation; and insure the work is completed in substantial compliance with the Plans and Specifications.

A. Authority and Duties of the Engineer

Standard Specification 00727

Under the direction of the Region Director and the Region Project Manager, the Resident Engineer should have immediate charge of one or more construction projects. Within the limits of the Department's policies and control procedures and the approved program and policies of the Region, the Resident Engineer is responsible for and has delegated authority for obtaining work that is satisfactory in respect to the requirements of the Plans, Specifications, and Contract. All personnel assigned to the project are responsible to the Resident Engineer in the fulfillment of their duties. The Resident Engineer should delegate to their assistants such authority, as they deem necessary for the proper performance of their work without relinquishment of their overall responsibilities.

This responsibility is not relieved when cities and counties elect to use their own forces or the services of a consultant are used.

1. Level 2 Control

An exception to the State and Federal requirements occurs when the consultant is engaged on a retainer by the city or county to provide general engineering services (serve as a local engineer). This exception is further defined by (1) the consultant being retained on a predetermined rate of compensation based on a cost per unit of time and (2) the length of service being related to the calendar rather than to a particular project. When this exception applies, the Department's review of the

projects will be less thorough as compared to Level 1 projects and projects for which you have assignment for full Department responsibility. Your reviews will be audit reviews. You should visit the project and take any Department employees you feel might aid your review.

- Review project files for completeness, accuracy, acceptability as to form, etc.
- Review all Contact Sensitive Solutions
- Review the personnel's ability to do proper inspection, testing and surveying.
- Review the Contractor's workmanship to satisfy the contract provisions.
- Make sure timely submission and review of accident plans, progress schedules, etc. are accomplished.

When the project to which you are assigned has active construction in progress, you should visit the project at least once a week. You should use discretion and visit more often if you feel it requires your attention.

- Monitor: Labor Compliance, Equal Employment Opportunity and the DBE Special Provisions.
- Review: E.E.O. Compliance in accordance with the E.E.O. specifications of the contract. This effort should include compliance with minority and female employment as spelled out in the contract.
- Assure that training goals are being met in accordance with contract specifications.
- Assure that project bulletin board is in place and in compliance.
- Monitor: DBE subcontract compliance. Subcontracted work to a DBE must be performed by the DBE.

2. Method of Work

The Contractor is responsible for the procedure employed to perform the contract. Where the contract specifies the procedures or method by which work is to be done, the Resident Engineer has authority to refuse to accept work done by any other procedures or method, even though the Contractor may contend that equally good results can be secured by some other method.
If the contract does not specify the procedures or methods, and if the Resident Engineer believes a method selected by the Contractor may result in faulty work, it is proper to advise the Contractor in writing. However, it should be made clear that the Resident Engineer is not dictating the method. The Resident Engineer should in no way attempt to supervise work for the Contractor.

When the contract specifically gives the Resident Engineer authority to select or prohibit a method, and such action is desirable, the Resident Engineer should issue

instructions to the Contractor to the required effect, either orally or by the use of directives. If advised orally, an appropriate notation should be made in the diary. The Resident Engineer is responsible for the accuracy of all notes and reporting procedures.

Random test site selection should, be made for all items specified to be tested on a random basis. The method of random test site selection should be transmitted to the Region Project Manager, Construction Division and Region Materials Engineer.
Policy & Procedure Manual - Procedure 08b-31

3. Project Diary

The Resident Engineer should keep a diary for each contract in which matters of importance regarding the project should be entered daily.
Construction Manual Chapter 10

4. Delegation of Authority

The Resident Engineer is not expected to function as the sole representative of the Department but needs various assistants, Inspectors, and others to watch closely the different phases of work for proper compliance and for keeping records in order.

To have an efficient organization, the line of authority will be well defined. Each employee should be delegated authority in line with administrative responsibilities. The Resident Engineer should check to see that delegated duties are being properly discharged.

The Resident Engineer should delegate the responsibility for inspection supervision on the project to one or more experienced Inspectors. As Chief Inspectors, these persons should have the authority to direct and coordinate the activities of all inspection personnel and make day-to-day decisions involving engineering judgments of an immediate nature.

All employees should accept their delegated responsibilities and make decisions within the authority delegated them.

5. Traffic Manager

The Resident Engineer should assign a member of the crew as Traffic Manager to be responsible for the management of traffic through the construction zone.
Policy & Procedure Manual - Procedure 11-105

6. Contractor Coordination Sessions

The Resident Engineer should schedule coordination sessions weekly with the Contractor. These sessions should be instrumental in the determination of project schedules of work. Unsatisfactory progress should be directed to the Contractor's attention in writing. If the Contractor fails to act in keeping with the intent of this

section, the matter should be directed immediately to the attention of the Region Project Manager.

Construction Manual Chapter 1, Section 108.3

B. Cooperation by Contractor

The Contractor's goal is to perform and complete, at a profit, the work under contract with the Department. The goal of the Department is to make certain that acceptable work is completed in accordance with contract terms, including the plans, specifications and estimates. To accomplish these goals there must be cooperation between the two parties. The Contractor should expect to do what the contract requires, and the Department should expect to pay for contract work done. The Contractor should not expect to be paid for work done, but not required by the contract unless an agreement is made. The Department should not require the Contractor to provide more than the contract requires, unless the Contractor is adequately compensated.

The conduct of relations with the Contractor should be fair, courteous and based on sound, reasoned judgment backed up by specifications and policy. The Department's decisions should be firmly conveyed to the Contractor without personal opinions. Good relations with the Contractor should be promoted by advising, whenever possible, of unacceptable work while the operation is in progress, rather than waiting until the work is completed and then requiring its removal or a pay reduction.

The Department does not manage the Contractor's operations. We are to give all instructions about the work to the Contractor or to the Contractor's superintendent. Instructions are not to be given directly to the Contractor's workers or the Subcontractors. Suggestions can be given if requested by the Contractor.

Project personnel should not make derogatory remarks about the organization, personnel, equipment or methods of the Contractor or Subcontractors.

Project personnel should not place themselves under obligation to the Contractor by accepting gifts or services. Excessive fraternization with the Contractor and Contractor's personnel should be avoided.

Project personnel should fulfill any reasonable request of the Contractor that will allow accomplishment of work in accordance with the contract provisions and without delay, but should not perform tasks that are the responsibility of the Contractor or Subcontractors.

C. Cooperation with Utilities

Frequently, the facilities of utility companies affected by the construction or improvement of a highway or street occupy portions of the right-of-way. Utility companies are obligated, sometimes at their expense, to move, relocate and protect their facilities which are in the way of or which may interfere with construction of the project.

The utility facilities affected by a highway improvement may exist, by agreement with the former landowner, on our newly acquired right-of-way. Where the cost of necessary alterations of such utility facility and release of the utility's prior rights is an obligation of the agency acquiring the new right-of-way, a contract and release of utility interest is negotiated between the agency and the utility company for performing the alteration and vacating the new right-of-way.

Utility companies are given advance notice of intended highway improvements. Upon completion of the design stage, plans of the proposed improvement are sent to them so they have adequate time to make the necessary preparations for relocation of their facilities and to establish relocation schedules for vacating the construction area prior to start of construction of the highway project whenever practicable.

Utility facilities, which cannot be relocated or adjusted prior to construction, are to be scheduled for alteration and coordinated with the Contractor's schedule of operations at the preconstruction conference. The Utility Engineer will be attending the preconstruction conference to provide information to the Contractor on the status of the utilities.

If work under a utility contract is performed in the absence of a highway improvement contract or prior to start of operations under a related highway improvement contract, the Region will assign a Resident Engineer to document the work under the utility contract. Starting date for work under a utility contract will be arranged between the Region and the utility company. Notices of starting and completion dates will be reported to the Construction Division.

Where utility companies occupy portions of the right-of-way, the Region will notify such utility companies of the anticipated start of construction operations so necessary relocation or adjustment of their facilities may be made without undue delay to the Contractor's operations. This might be done at the preconstruction conference if utility companies attend.

Utility companies should be invited to attend the preconstruction conference. On projects with complex or extensive utility involvement, it is advisable to schedule a meeting of all affected utilities prior to the preconstruction conference to discuss schedules and coordinate efforts.
The Resident Engineer should stake the right-of-way, and other lines needed by the utility company in their work, as soon as possible in the progress of the project.
In the interest of expediting the work, the Resident Engineer should make early contact with local officials of utility companies who have not started required adjustments of their facilities and advise them of the date the Contractor intends to start construction operations, stressing the need for early completion of necessary alterations.

During the progress of the project, the Resident Engineer should hold field meetings on a regular basis with the Contractor's superintendent and the utility crew supervisor.

The Resident Engineer should also be passing along to the Contractor all notifications of utility work changes.

Where adjustments of utility facilities are accomplished during stages of construction operations and problems are created between the Contractor's operations and the utility operations, the Resident Engineer should be the coordinator. The Resident Engineer should keep a record of the progress of the utility adjustments and report all problems to the Region Project Manager.

The Resident Engineer should make necessary inspections of utility alterations to assure alterations are made to the necessary extent and in a manner, which avoids any interference with, or detrimental effects to the planned highway improvements.

Construction Manual Chapter 10, Section 10.9

Regardless of the type of utility contract, the Resident Engineer should keep records and maintain diary entries to document inclement weather, lost time, verbal authorization for minor changes, progress records, coordination of highway and utility operations and all factual evidence that may be or is pertinent to the recommendation or verification of pay estimates to the utilities.

D. Construction Stakes, Lines, and Grades

The Resident Engineer's responsibility is to stake the project and to see that the Contractor is informed of the meaning of all stakes. If the Contractor is responsible for staking all or part of the project, the Resident Engineer should monitor and assure through spot checks that lines, grades, and elevations are in conformance with plans and specifications. It is also the Resident Engineer's responsibility to know and to document the fact that all materials used meet controlling specifications and that the finished project meets alignment, grade, quality, and quantity requirements of the contract. Authority to alter plans should be limited to minor field changes.

E. Duties of Inspector

The work and materials are inspected to obtain acceptable work in accordance with the requirements of the contract. It is the responsibility of the inspection forces to determine that the work is performed in accordance with the specified requirements. The inspection forces are, represented by the Resident Engineer and the inspectors.

To provide good inspection, an inspector must have a good knowledge of the work required by the contract. Prior to construction, all members of the inspection forces should thoroughly study the plans, specifications and contract provisions to familiarize themselves with the requirements and be prepared to readily and correctly answer questions concerning the work that may arise during the construction operations. Inspectors should consult with the Resident Engineer before the work is started for clarification of provisions or requirements not thoroughly understood.

The inspector should make certain all materials and work are in compliance with the contract. The Contractor's operations that are significant to the quality of the project should be closely observed, tested, measured and documented. Operations that can be inspected and tested after the fact should be done so. If the operation provides little or no significance to quality, little testing, observing and documentation should be done.

Unacceptable work and material rejections should be brought to the Contractor's attention at once for prompt correction. If not promptly corrected, the situation should be brought to the attention of the Resident Engineer for resolution.

Most work inspection requires the inspector to be present during the operations where the inspector can observe details of the work. Instructions to the Contractor about the work will be in the form of the results desired rather than the method of doing it, except when specifications require a specific method be followed. Suggestions may be made when asked for by the Contractor. A daily record should be kept, for future reference, of all pertinent instructions and suggestions given the Contractor, including the date, name of party to whom given, whether written or oral, and all pertinent information.

Instructions and suggestions concerning the work are to be given to the Contractor, superintendent or work supervisor, but not to the workers. Any suggested changes should be given solely for the benefit of the work and should be clearly differentiated from directions. Orders given for corrections of errors found in the work should be based on judgment that reflects fairness, impartiality and a thorough knowledge of the work in question. Should the Contractor take exception to such orders, arguments should be avoided and the matter immediately referred to the Resident Engineer for interpretation and settlement before the work progresses. To avoid complications in final closeout of the project and possible claim for extra compensation, differences arising between the Resident Engineer and the Contractor over interpretation of the Specifications or other requirements of the contract should be promptly referred to the Region Project Manager for an understanding and agreement with the Contractor of the contract requirements.

Members of the inspection forces should not act as work supervisors for the Contractor by directing or supervising the workers in accomplishing their tasks, nor to assist the workers or perform any task or duty for the Contractor

Unsafe working conditions should be brought to the attention of the Contractor for immediate correction. The circumstances should be noted in the inspector's diary. If the unsafe conditions are not promptly corrected, the situation should be brought to the attention of the Resident Engineer for resolution.

The importance of the inspector keeping a neat, complete, up-to-date and accurate diary and submitting reports in a timely manner cannot be overemphasized. If there are disputes, the daily records are the legal documents with which the matter may be resolved. They also serve as one basis for Contractor payment.

The Resident Engineer, whenever possible, should avoid using the same inspectors on successive jobs with the same Contractors.

F. Claims and Disputes

The Department recognizes that disputes are rarely settled to the full satisfaction of all parties involved. In the mutual interest of all parties, the Department vigorously promotes resolution at the lowest possible level and also advocates timely submission of claims and responses thereto, recognizing that objective claim analysis requires reconstruction of circumstances and events, which happened some time in the past. This analysis becomes more difficult with continued passage of time.

The Utah Department of Transportation Standard Specifications, provide that the Contractor must notify the Resident Engineer, in writing, of intent to file a claim for extra compensation when the Contractor feels such compensation is due. This notice must be filed before commencing any work that will provide a foundation for the claim. If the Contractor does not notify the Resident Engineer in this manner, the claim will be, denied by the Department.

Policy & Procedure Manual - Procedure 08b-91.1

All parties involved in a dispute or claim are strongly encouraged to resolve the issue within the terms of the contract and at the project level. If issues remain unresolved in the field they will be, reviewed by the Region Project Manager in conjunction with appropriate Construction Division staff.

If the issue remains unresolved an administrative review and determination, is made by the Engineer for Construction & Materials. The matter if unresolved, will then be referred to the Department's Claim Review Board and subsequently, if desired, a case could be initiated in the courts.

1. Claims & Disputes Guidelines

Recognition and Classification of Disputes and/or Claims

The Resident Engineer must recognize when conditions on the project have changed or are different from that which was anticipated in the plans or that would be anticipated in the normal course of doing that type of work. Even though the law and the specifications require notice of claim within 5 calendar days, it is important to react to Contractor comments or complaints about the plans or specifications in order to avoid missing the chance to document some valuable information. Project Engineers are to keep the Region Project Manager advised of problems. The following is a list of the Classifications of construction claims:

G. DIFFERING SITE CONDITIONS:

Conditions other than what a prudent person would have expected

(Ref: Standard Specification 00725)

1. Type I- Subsurface or latent physical conditions differing materially from those indicated in the contract.

2. Type II - Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered in work of the character provided for in the contract.

H. CONSTRUCTIVE CHANGES:

Changes resulting from acts attributable to the Department which cause more work or more time on the job than planned, but for which the Department refuses to execute formal change orders. Directives, suggestions or comments to the Contractor by the Resident Engineer or project personnel may later be construed as the basis for this type of claim. When communication of this nature occurs with the Contractor, it should be recorded in a diary or in memo form with the reasons for the action clearly set forth.

1. WORK OUT OF SEQUENCE: Work in a different order than originally planned.

2. CHANGE IN METHOD: A change in the way of doing the work on a project.

3. OVER INSPECTION: The Resident Engineer, demands work quality higher than normal industry standards or requires special operations.

4. DEFECTIVE DRAWINGS: Errors, omissions, or ambiguities occurring in the drawings.

5. HIGHER STANDARDS: Requires higher quality work than called for in the specifications.

6. NON- DISCLOSURE: Failure to provide all available information usually relates to information known by the designers but not made a part of the contract documents.

7. IMPRACTICAL OR IMPOSSIBLE: Work physically impossible to perform or economically impractical.

I. SCHEDULE CHANGE:

A change in the time or sequence of the schedule to complete a project

1. SUSPENSION: Work stoppage for one party's benefit (Ref. Standard Specification 00725 TERMINATION: Default for bad work or failure to perform (Ref. Standard Specification 00555). For Department's convenience (Ref. Standard Specification 00555).

J. ACCELERATION:

When the Department orders completion of the project sooner than required by the contract or orders work finished on the original completion date failing to grant time extensions, which are due.

1. DIRECTED ACCELERATION: Order to complete prior to contract completion date.

2. CONSTRUCTIVE ACCELERATION: Insistence on the original schedule despite entitlement to time extensions.

K. DELAYS:

There are three types of delays: delays, which are the responsibility of the Department; delays, which are the responsibility of the other party; and delays, which are beyond the control of either party.

1. DEPARTMENT CAUSED: Lack of access Department interference Directed reduction in manpower Directed slowdown Late shop drawing approval Design error Failure to accept Right-of-Way Purchase

2. CONTRACTOR CAUSED: Rework Lack of Productivity Procurement failures

3. FORCE OF NATURE: 100 Year Storm Hurricanes Tornadoes War

L. MISCELLANEOUS:

These Claims do not fall into any of the above categories.

1. MATERIAL BREACH: Violation of an important contract obligation.

2. REFUSAL TO ACCEPT COMPLETED WORK:

   Department refuses to take over completed work and Contractor is forced to maintain and protect the work.

3. EARLY OCCUPANCY: Department moves into facility and interferes with the Contractor

4. CHANGE IN SCOPE: Project’s purpose is altered or increased significantly.

5. DIFFERING INTERPRETATIONS OF PLAN REQUIREMENTS (AMBIGUITIES): If plan requirements are ambiguous, the general rule to that is the Contractor’s interpretation is favored, if it is reasonable, even though not correct since the Department created the ambiguity. If it is a "patent" ambiguity (one that is obvious to anyone) then the Contractor is supposed to seek clarification prior to bidding or risk being required to comply with the Department's interpretation.

"Latent" ambiguities (not obvious) are always the Department's responsibility.

6. DISRUPTION: Changes to the Contractor's planned or scheduled use of resources, which are beyond the control, or the fault of the Contractor.

7. LOSS OF PRODUCTIVITY: Interference caused by adjoining projects or other Contractors. Weather problems caused by delayed performance. Excessive overtime, equipment standby etc.

8. EXTENDED OVERHEAD COSTS: This can be for both, job overhead and home office overhead incurred because of any or all of the above items.

9. ESCALATION OF COSTS: Delayed performance usually causes an increase in costs for materials and labor. It is important to become familiar with the different types of claims to better recognize a claim situation as it is happening.

Claims & Disputes Flow Chart

1. Procedures For Processing

a. Receipt of Claim Notice

A sustained effort to resolve and to mitigate effects of a claim must be implemented immediately on receipt of notice of a claim. Notice should be given as per Standard Specification 00725:
Notification of Differing Site Conditions, Changes and Extra Work. The notice will be reviewed to decide which of the following categories apply for purposes of processing the claim.

1. Claims brought under Standard Specification 00725 for Differing Site Conditions - These typically involve soil conditions, groundwater or other physical conditions on the project.

2. Claims brought under Standard Specification 00725 for Significant Changes in the Character of the Work – These are, always based on an order or direction by the Resident Engineer to change the plans or specifications. The change must materially affect the character of work in kind or nature for an adjustment to be warranted. Increases or decreases in quantities are not the sole factor for determining whether or not a change is significant for contract items. A quantity change of more than 25 percent in a major item is automatically considered significant. A quantity change of more than 50 percent in a minor item is automatically considered significant.

   Quantity may be a factor in other cases, but not the sole determining factor. For example, the plans call for numerous culvert extensions totaling 1640 feet. When the project is nearly complete the Resident Engineer directs that a 100-foot culvert under a 30-foot fill has to be replaced. The quantity changes less than 10 percent, but the character of the work has changed materially.

3. Claims brought under Standard Specification 00725 Suspension of Work Ordered by the Resident Engineer – These involve orders to suspend work issued in writing by the
Resident Engineer.
4. Claims brought under Standard Specification 00727 for Disputes. This typically involves disputes over interpretation of specifications, test procedures and results, quality of work and workmanship. It is important to remember that the standard for evaluating a claim based on interpretation of contract provisions and plan sheets is whether the Contractor's interpretation is "reasonable" based upon the information presented. It does not have to be a correct interpretation to support recovery.

5. Claims brought by reason of an alleged breach of contract. Examples are delays in providing access or right-of-way, untimely or punitive inspection, misrepresentation of information and the like. Generally no remedy is specified in the contract.

b. Processing Different Categories of Claims

1. Differing site condition claims require prompt written notification as per Standard Specification 00725 Differing Site Conditions, Changes and Extra Work, before the condition is disturbed. The Resident Engineer should notify the Engineer for Construction & Materials if the site will be obliterated or concealed by subsequent construction activities. In addition, on a Federal-aid project, notify the FHWA Division if the total cost of the claim can be reasonably expected to exceed $25,000, in accordance with established agreements. The Region Project Manager and other Department personnel, as necessary, will investigate upon receipt of the notice. If this investigation reveals the condition does differ materially an adjustment will be made. This may be time or money or both. Adjustments will be based on a reasonable estimate of construction costs and time to perform the work. Adjustments will be documented by change order. No adjustment will be allowed for impact on unaffected work. The Contractor must be promptly notified in writing when it is found conditions do not materially differ and no adjustment will be made. Either party to the contract can initiate a claim for an adjustment because of differing site conditions. Adjustments in favor of the Department are possible. If the Contractor does not agree with the Resident Engineer's written decision on the differing site condition or with the adjustment, the claim is then handled according to Standard Specification 00727: Claims and Disputes. The provisions for Notice of Potential Claim, filing the claim, record keeping and all time limits come into effect upon receipt of the Resident Engineer's written decision.

2. Significant change in the character of work - This type of claim always begins with an order or direction of the Resident Engineer to change plans or specifications. The work must materially change in kind or nature to trigger consideration of an adjustment. It is important to make the Contractor aware of a change and how payment will be made as soon as possible. This should be in writing. This is done by Change Order when an adjustment is warranted. It should be done by letter when an adjustment is not warranted. This makes the Contractor responsible to give notice if they don't agree with the payment and feel an adjustment should be made. The

adjustment is to be arrived at by agreement before the work is done where there is significant change. This is to be based on an estimate for reasonable construction costs and/or time required to perform the work. If there is no agreement, then the adjustment is what the Resident Engineer determines to be fair and equitable. This should be based on reasonable actual construction costs and time to perform the work. Major contract

Item quantity adjustments will apply only to quantities in excess or 125 percent or to actual work performed when the quantity is less than 75 percent of the original contract amount. Minor contract item quantity adjustments will apply only to quantities in excess of 150 percent or the actual work performed when the quantity is less than 50 percent of the original contract amount. Should the Contractor not agree with the Resident Engineer's determination that a change is not significant or with the adjustment amount, the claim is then processed under Standard Specification 00727 Requirements for Notice of Potential Claim, filing claim, record keeping and time limits come into effect on receipt of written decision on whether or not the change is significant or on the adjustment.

3. Suspension of Work Ordered by the Resident Engineer. The first step in processing this type of claim is to determine whether or not the specified criteria for an adjustment have been met. These are:

- The suspension must be ordered in writing.
- The Contractor must request adjustment in writing within 7 calendar days after the notice to resume.
- The suspension must be for unreasonable period of time.
- The, suspension must be beyond control of and not caused by Contractor, Subcontractors or suppliers.
- The suspension is not caused by weather.
- Performance would not have been delayed by any other cause.

The next step, if all the criteria are met, is to determine the amount of adjustment. This should be based on reasonable construction costs and time to perform the work. The adjustment is then made by, Change Order. Again, the provisions of Standard Specification 00727: Claims and Disputes come into effect at any point in the process where the Contractor disagrees with the Resident Engineer's decision.

4. Claims and Disputes -

These begin with an action or decision by the Resident Engineer. Whenever the Contractor disagrees with the Resident Engineer's decision, the provisions of Standard Specification 00727 automatically come into effect. Notices of claims in this category must be submitted as per Standard Specification 00725: Notification of

Differing Site Conditions, Changes and Extra Work. The Contractor must submit the written notice within 5 calendar days of being informed of the Resident Engineer's decision, action or instruction. If the Resident Engineer's decision, action or instruction is not in writing, the Contractor should first have it confirmed in writing.

The 5-calendar day time period will start when the Resident Engineer's written decision is delivered to the Contractor. The Resident Engineer's written response will be provided within 10 days after receipt of notice. Such response must be based upon the contract requirements.

The Contractor must maintain daily records concerning details of the potential claim and give the Resident Engineer access to them when so requested. All claims appealed by the Contractor should be in writing as per Standard Specification 00727: Claims. Failure to submit and document the claim as required constitutes a waiver. The Resident Engineer will evaluate the claim when all work is complete and costs incurred. They may request additional information from the Contractor. The Resident Engineer will respond to each of the items in the Contractors claim. The Resident Engineer will consider the facts of the situation in responding to the claim. The response will be based on the facts and terms of the contract. It will be supported with adequate evaluation and analyses.

The Contractor's claim and the Resident Engineer's response will be transmitted to the Engineer for Construction & Materials through the Region Project Manager. The Engineer for Construction & Materials will review the records submitted by the Resident Engineer. A request for further information may be made from the Resident Engineer or the Contractor. The Engineer for Construction & Materials may affirm, overrule, or modify the Resident Engineer's decision or may schedule a hearing before the Claims Board of Review. The Claims Board of Review will recommend a settlement to the Deputy Director. The Deputy Director's decision is administratively final.

5. Claims founded on breach of contract should be subject to the notice and submittal requirements of Subsection 105.2: Claims and Disputes. These claims involve issues outside the terms of the contract. They often involve legal questions as well as questions of fact. The Assistant Attorney General should be consulted and involved in this type of claim from the earliest stages.

c. General Guidelines for Reviewing and Evaluating Claims

The first step in evaluating a claim will be a determination as to whether or not the Contractor's alleged basis for the claim is in fact valid. A determination of the amount of costs, which are eligible for additional compensation, is required where it is found that a claim is valid. If it is determined that the alleged basis of the claim is not valid, and then costs should not be considered in reaching a decision. This determination will be based on terms of the contract and existing conditions. An initial determination must be made on receipt of the notice to facilitate early resolutions where possible.

d. Costs Eligible for Settlements

Adjustments or allowances implemented by Change Order prior to work being performed must be based on an estimate of the reasonable cost of performing the work. The criteria for a normal agreed price Change Order should be used. The same supporting information and documentation is required. Settlements arrived at after the work is done must be based on actual incurred construction costs of the affected work.

Actual incurred construction costs will include reasonable and supportable markups for overhead and margin including profit, as well as direct costs for labor, equipment and materials.

Anticipated profits are not allowed. An example is a profit markup for work not actually performed. Work for which the claim is made is often part of a larger operation. This raises questions as to the proper allocation of costs to the affected work. The costs submitted by the Contractor may or may not reflect a proper allocation. Several approaches are available to make a determination in this regard.

It is often possible to make an allocation on the basis of time and sequence of the work. Diaries, both Contractor's and Department's should be examined. The difference between costs of doing the work as planned and doing the work under claim conditions can be used. Costs of doing work as planned can often be determined from the costs of similar work on the project not affected by the claim. In some cases it may be possible to estimate the cost of the work as planned using generally accepted methods and production rates.

The approach of using the difference between the total cost of performing the work and the bid amount or the Contractor's estimate in bidding is not acceptable. The reason for this is that the total cost includes costs of the Contractor's own inefficiencies and removes any incentive for the Contractor to economize.

e. Verification of Costs

The Contractor is responsible for maintaining accurate and complete records of the costs of claim related work.

The Department will collect and record adequate information to reasonably verify the Contractor's cost records. This should be done at the project level. It is not the intent to duplicate the detail of the Contractor's records, but to reasonably check and verify them.

The project records will consist of diaries or other records sufficient to answer questions such as: Was a certain piece of equipment on the project on a certain date? Was it operating or broke down? How many men were working in the claim area? A photo or videotape history is suggested as a good means of recording progress and equipment in use as well as conditions. Periodic serial photography or videotaping should be considered in cases of major claims.

The specifications require the Contractor to make records available for technical or audit examination. This will be done in all cases where settlement of a major claim is involved. It will be done on all claims where there is a question as to the reasonableness of a particular cost claimed.

An audit examination must be conducted by or under the direction of the Internal Auditor. An audit examination is primarily concerned with record verification, accounting procedures and cost allocation practices.

f. Claim Settlements - Project Level

Settlements in the form of adjustments or allowances made prior to work being performed, will be implemented by Change Order following established procedures.

Settlements after the work is complete will also be implemented by Change Order. These Change Orders will be identified as claim settlements. A copy of the Resident Engineer's decision and sufficient information to fully support the settlement will be included in the Change Order.

g. Claims Brought to Litigation

The review, evaluation and disposition of all claims brought to litigation will be under the direction of the Assistant Attorney General. The Region, Construction Division and Internal Audit will provide assistance as requested.

Construction Manual "Legal Services" Section 107.300

h. Information to be submitted with Request for Federal Participation

Upon award or settlement of a claim, (other than by a Change Order, which Federal participation is requested, in accordance with established procedures,) a written summary will be prepared by the Construction Division and submitted to the FHWA. The summary should include:

• Legal and contractual basis for the claim.

• Region analysis of claim including financial and cost data.
• Audit of costs incurred by Contractor,

• Legal briefs when prepared and involved.

• Other pertinent information.

3. Avoidance Of Claims

a. Communications with Contractor

Clear lines of communication should be established between the Contractor and the Resident Engineer. Generally communication should primarily occur between the Resident Engineer and the Contractor's superintendent. Where practical, establish

limits of delegated authority and time frames for making decisions so communications between lower level employees is well defined.

Written or verbal requests from the Contractor to the Resident Engineer should receive prompt attention. Anytime a decision concerning a change or contract interpretation is requested, it must be recognized that time is money and that a response is required within a "reasonable" time. What is "reasonable" will vary depending on the nature of the request but will usually be determined by industry standards. Delayed response or no response at all invites claims.

Regular scheduled meetings between the parties to discuss planned work activities, their sequence and scheduling as well as changes which are occurring or which are anticipated can be an aid to both parties in avoiding claims.

It is important to maintain a professional, business like approach in all contacts between the parties. Avoid the temptation to turn business contacts into social gatherings. Keep the relationship at arms length so that judgements and decisions are not compromised but remain proper and consistent with contract requirements.

b. Dispute Resolution

Frequently, plan errors or deficiencies surface during construction and if not resolved nearly always lead to claims. Affirmative action should be taken at the earliest possible time to resolve the problem. It may require a Change Order or in some extreme cases it may require a termination of the contract. The first priority should be a complete investigation of the facts and conditions. The results of the investigation should be documented for future reference. If plan changes or modifications involving redesign are refined, it should be scheduled and arranged to minimize delay. The Department's, specifications provide for such eventuality and purport to deny recovery for delay incurred in the redesign effort. Such provisions should only be upheld if the Department can establish that it acted with reasonable diligence.

When a course of action is determined, it is important that there be a sufficient explanation given to the Contractor to insure that there is a meeting of the minds and that any required Change Order is properly drafted to clearly express the understanding between the parties.

It is important to remember that no agreement is proper if it is based on erroneous assumptions or can be construed as unfair to either party. Don't hesitate to request assistance in the negotiation process both from the Construction Division, the Attorney General and by seeking detail and justification from the Contractor to back up or support the agreement.

Insistence on compliance with the contract terms and conditions is right and proper. However, judgment and discretion are also required. There may be a need to modify or change certain particulars of the contract to insure performance. Plans are not always perfect and it does no good to insist on the impossible. When a problem arises, don't be afraid to discuss possible solutions with the Contractor. Seek input

from the Contractor as well as others within the Department who have experience and expertise. The important thing is to be decisive and to resolve the problem in a fair and equitable manner.

c. Legal Services:

Refer to Section 107.300 "Legal Services" in this Manual for Instruction, to improve the Department's effectiveness of available services.

d. Preconstruction Conference

At an early date following the award and execution of the contract, The Resident Engineer should arrange a preconstruction conference. The purpose should be to permit a general and open discussion between the Department personnel, the Contractor, utility companies, railroads and other invited parties. The Resident Engineer or Consultant (if applicable) should conduct the conference.

Topics of discussion should include Partnering, the Contractor's plan of operation, utility and railroad company plans for alterations, and the contract plan and specification requirements. Environmental commitments permit requirements and erosion control measures will receive special attention and emphasis and be reviewed in detail.

Other topics may include coordination between the Contractor, railroad and utilities; stages for completing the work; anticipated traffic problems and traffic handling procedures; external equal employment opportunity specifications; field office and laboratory requirements; project safety; wage rates; etc.

Representatives of the Contractor, the Department, and the Consultant, if applicable, should individually or jointly study the plans and contract provisions prior to the conference. In addition, a field review of the project site with plan in hand is encouraged in order to check the fit of the plans to the terrain. Steps needed to be taken to adjust the plan for side roads, private entrances, drainage, etc., can then be discussed at the conference.

A written record of the conference will be made for the Resident Engineer and Region Project Manager's records. The record will include names of attendees; topics, plans and problems discussed; and decisions made. A copy will be sent to attendees upon request.

Control of Materials

Policy & Procedure 08b31.1

The service life of a highway is dependent upon the quality of the materials used in its construction as well as the method of construction. The Standard Specifications provide that only materials conforming to the requirements of the contract should be

used and the Contractor is responsible for furnishing materials meeting specified requirements.

A. Laboratory Qualification

Refer to Section: 1013 Materials Manual "Laboratory Qualification Program

B. Quality Assurance

Refer to Section: 1010 Materials Manual " Quality Assurance Program"

For procedures referred to in the Standard Specifications and not covered in the Materials Manual, ASTM or AASHTO standards must be referred to.

Materials, unless otherwise permitted by the specifications, cannot be incorporated in the work until tested and approved by the proper authority. In the supervision of the construction of the project, the Resident Engineer will ascertain that a material has been properly accepted before permitting its use in the work.

Materials tested and approved at their source or otherwise previously approved, but which have become damaged or contaminated prior to use in the work, are subject to rejection by the Resident Engineer. The Resident Engineer also has the right to prohibit delivery of any material to the job site until tests indicate full compliance with specifications, and to reinspect or retest plant inspected materials, rejecting those that do not comply.

C. Use of One-Site Materials

In the interest of conservation of aggregates or other materials required in construction of the project, the Standards Specifications 00725 permit the Contractor, with approval of the Resident Engineer, to use materials encountered in excavation of the roadway in lieu of materials normally furnished by the Contractor from outside sources.
Such materials so removed will be, measured as roadway excavation subject to replacement with other materials by the Contractor, if and as required, suitable for construction of embankments, backfills and other appurtenances required in the contract. When a material is removed from the roadway and is used by the Contractor in lieu of material normally furnished, agreements should first be made between the Contractor and the Resident Engineer relative to methods of measurement, quantities of material, shrinkage factors, etc., when appropriate.

It will be the general rule not to permit removal of such materials from areas of the roadway beyond the limits of excavation as indicated by grade and cross section of the finished graded roadway. In the general interest of the project, however, and with the specific approval of the Resident Engineer, aggregates and other granular materials may be removed from within the right-of-way beyond the roadway grading limits for specific uses under the contract. Removal and use will require the execution of a contract change order covering excavation and measurement of the material,

restoration of the area and adjustment in the unit price of the item of work. The unit price of the item will be adjusted to allow the Department the benefit of the reasonable value of the material removed from the right-of-way and used in the work. Any materials required for restoration, of the excavation area and of the right-of-way will be furnished by the Contractor at the Contractor's expense. In no event should aggregates be removed from the right-of-way beyond the roadway grading limits for use on other projects or contracts, or for purposes other than those required under the contract.

D. Samples, Tests, and Referenced Cited Specifications

(Refer to Minimum Sampling and Testing Guide)

Certificate Of Compliance
(See Standard Specification: 01455)

1. Tests are performed in accordance with the most recent cited method of the AASHTO, ASTM and Western Alliance for Quality Transportation Construction (WAQTC) and the Department's Manual of Instruction in effect on the date of project is advertised.

   The Contract or the Department's current minimum sampling and testing requirements designates manufactured materials and assemblies that can be

   Incorporated in the work, if accompanied by Certificates of Compliance from the manufacturer.

2. Cost of Resolution or Retesting Charges (Refer to Standard Specification 02741)

The Department will perform up to two volumetric mix design verifications at no cost to the Contractor. The Department will charge for additional verifications.

Materials Manual Section 1011: In principle, the determination of who pays for the additional testing will depend on the outcome of the final analysis.

Costs of this nature should be deducted on the next partial estimate submitted after the costs have been determined. These costs should also be listed in a separate grouping on the estimate invoice to insure that the cost of construction is not affected by deductions made from monies due the Contractor.

In those cases where a Contractor is to be charged the cost of retesting, the Contractor must be advised in writing prior to the assessment of these charges and at that time the Contractor should be furnished a breakdown of how these costs were determined.

E. Buy America

Refer to Standard Specification 01455

Legal Relations and Responsibility to Public

A. Laws, Rules and Regulations to be observed

The Contractor should at all times observe and comply with all federal and state laws, local laws and ordinances, and regulations which in any manner affect the conduct of the work, and all orders or decrees of bodies or tribunals having jurisdiction or authority over the work. In effect, the specification does not contain any additional requirements over those already in existence. It requires the Contractor's attention to the possible existence of laws and regulations, which may govern construction, both on and off highway rights-of-way.

The specification does not intend or require the Resident Engineer to exercise police enforcement power, but if the Contractor is observed violating a law or regulation of which the Resident Engineer is aware, the matter is to be brought to the Contractor's attention, requesting compliance with the law. Where flagrant violations affecting the work are observed, the Resident Engineer has the authority to stop operations and assure compliance before permitting work to proceed.

The Department intends that its contracts will conform to applicable state, national, and industry standards. However, the Resident Engineer's primary responsibility is to assure compliance with contract requirements and standards pertinent to the contract. Wherever there is a conflict between standards required by the contract and other

Standards, the contract standards will be followed provided sound engineering practice is not violated.

B. Federal Aid Participation

Federal Aid participation in the cost of projects is established through compliance with Federal laws, regulations, and FHWA policy as written and interpreted in the Federal Aid Policy Guide (FAPG). Implementation of this guidance is considered the stewardship of the FHWA in the interest of the citizens of Utah and the rest of the US. The term "Stewardship" as used in the context of highway construction in Utah is the process of providing oversight and accountability for all resources used in carrying out the Federal-Aid highway program in the state of Utah.

FHWA Stewardship Agreement

Implementation of the Intermodal Surface Transportation Act of 1991 (ISTEA) allows UDOT to exempt certain projects from full FHWA oversight in lieu of UDOT performing specific stewardship functions as noted in the Stewardship Agreement between UDOT and FHWA dated September 9, 1992. (See appendix) In effect, this agreement has delegated monitoring and decision-making responsibilities to the UDOT (or Engineer for Construction & Materials) for most Federal-Aid projects and reserved certain monitoring of programs for the Utah FHWA Division.

C. Public Convenience and Safety

Construction shall be conducted so obstructions to the public are minimized. The safety and convenience of the public and the protection of persons and property shall be provided for at all times. The safety provisions of all laws, rules, codes, and regulations applicable to the class of work being performed shall be followed.

The "public" is anyone passing through or affected by construction operations. This includes pedestrians and residents, as well as vehicular traffic.

The specifications leave the manner of conducting the operations and providing for convenience to the discretion of the Contractor. However, the Resident Engineer should ensure that the Contractor has made adequate provisions for the convenience of the public in a manner that fulfills the intent of the specifications.

D. Barriers, Barricades and Warning Signs

On construction projects, the Resident Engineer should determine, before permitting work operations to start or to continue, that the Contractor has provided and properly erected the necessary and required barricades and warning signs and has provided flaggers, if required, to adequately warn the traveling public of any obstruction in the road or work operations that may be a hazard to traffic.

Where the traffic is maintained on a construction project, advance warning is required sufficiently in advance of construction operations to alert drivers in time for them to become aware of conditions ahead before entering the work area. The number of signs and their proper position relative to the work area will be largely influenced by the type, volume and rate of speed of the prevailing traffic. Projects carrying large volumes of traffic at relatively high speed will require more and larger signs at greater spacing than is required by those having comparatively light and slow traffic. Refer to the Traffic Control Plan for the project.

E. Responsibility for Damage Claims; Insurance

The specifications relieve the Department and the Department employees of any responsibility for damage claims resulting from the Contractor's operations. However, Department employees should be alert to any hazards in connection with the work and should notify the Contractor of such hazards in order to avoid injuries, losses, legal disputes and claims. It must be remembered that suits against the Contractor for damages may also involve the Department or the Resident Engineer as a party. Good documentation of known problem areas and written notices to the Contractor are usually very valuable in resolving disputes.

1. Insurance

Prior to the awarding of the contract, the Contractor is required to furnish the Department with evidence that they have procured and will carry at all times, until the work has been completed, satisfactory insurance as required by the specifications.

The Construction Division is responsible for compliance with this requirement. The Resident Engineer only needs to be aware that the Contractor does carry the insurance.

F. Personal Liability of Department Employees

This section should not be misinterpreted. It does not say that public employees can do no wrong. There are instances when public employees can be held liable for personal acts. Acts such as overstepping authority, malicious acts and harassment may not be defensible under this section.

G. No Waiver of Legal Rights

This section established the right of the Department to adjust quantities, recover payment, and reject work when measurement, payment or acceptance was based on error or omission.

Accuracy in measurement and testing and good documentation will minimize the type of problem dealt with in this section.

H. Labor Provisions

All Federal-Aid contracts let to bid and entered into by the Department for the construction of highways contain provisions governing the employment and payment of persons hired by contractors, subcontractors and suppliers to perform the contract work. They are discussed in the following subsections:

1. Part IV - Payment of Predetermined Minimum Wage States that all workers shall be paid once per week at the wage rates attached to the contract. The wage rate schedule shall be posted at the job site. Wages and fringe benefits shall be paid in full without deduction or rebate, except where permitted by regulation. Overtime will be paid at 1.5 times base rate of pay for all hours worked over 40 per week. Trainees and apprentices will be paid at the predetermined rates for their work, if enrolled in a bona fide program.

2. Part V - Statements and Payrolls: Requires payrolls and records to be kept by the Contractor and subcontractors for three (3) years following project completion. Each week the Contractor and subcontractors shall furnish a payroll of wages accompanied by the statement of compliance to the Resident Engineer. Payroll records are to be made available for inspection by authorized representatives of the FHWA, US. Dept. Of Labor and the Department, and the Contractor is to allow employees to be interviewed on the job, during working hours, by such representative. It is a criminal offense, subject to severe penalties, for any Contractor or subcontractor to induce any person to give up any of the compensation to which the person is entitled under the contract. However, certain deductions such as income taxes, social security, health insurance premiums and many others made for the benefit of the employee, are allowable, and required by state and federal law. By virtue of the use of Federal funds

for highway construction. The Department's employees are subject to provisions of the Hatch Act, a Federal Law concerning political activity. A portion is quoted below:

a. No officer or employee of any State or local agency whose principal employment is in connection with any activity which is financed in whole or in part by loans or grants made by the United States or by any Federal agency shall (1) use his official authority or influence for the purpose of interfering with an election or a nomination for office, or affecting the result thereof, or (2) directly or indirectly coerce, attempt to coerce, command, or advise any other such officer or employee to pay, lend, or contribute any part of his salary or compensation or anything else of value to any party, committee, organization, agency, or person for political purposes. No such official or employee shall take any active part in political management or in political campaigns. All such persons shall retain the right to vote as they may choose and to express their opinions on all political subjects and candidates."

I. Enforcement of Contract Labor Provisions

The Department is responsible for enforcement of the Contract Labor Provisions to the same extent as any of the other contract requirements. The Department's Labor

Specialist and Region Contracts Reviewer should assist the Resident Engineer with the detailed enforcement duties connected with contract labor provisions.

The enforcement duties, with the exception of Contractor payroll submittal, are to be carried out on the same basis for state funded construction contracts and for federal aid contracts. Frequent reference should be made for guidance to the U. S. Department of Labor's Field Operations Handbook and UDOT Labor Compliance Manual.

1. Detailed Enforcement Procedures

The Resident Engineer or their assigned labor compliance representative should:

a. Make systematic spot interviews with laborers and mechanics engaged in contract work. Use Form C-136 for documenting the interview.

b. Observe the type of work being performed.

c. Make sufficient interviews to assure the rates being paid are not less than contract minimum rates for the work being performed.

d. Determine if the Contractor's method of timekeeping assures proper payment of workers and if not, suggest changes that will assure proper payment.

e. Ascertain employee's payday and examine payrolls to determine if they conform to the employee's version of work performed and hours worked. Keep record of such examinations on a payroll log form.

f. When questionable practices are discovered or complaints are received, make an attempt to have the matter adjusted through contacts with the Contractor's office or job personnel. Complaints are treated with confidentiality. Information acquired from a complaint or during an interview of a Contractor's or subcontractor's employee is not to be disclosed to anyone other than those doing the investigation, without prior written consent of the employee.

g. Where it appears violations may be taking place, make an examination of time cards, payrolls and other employment records as appropriate to establish the facts. Once there is evidence of a violation, the Contractor should be notified and be expected to attain compliance.

h. When various construction activities arise, make reference to the U. S. Department of Labor's Field Operations Handbook, or consult with the Region Contracts Reviewer or the Construction Division Labor Specialist.

i. Check the bulletin board on each project for all required posters and arrange to have deficiencies corrected. Use Form C-131 to document this review.

j. Review submitted payrolls for the correct descriptive nomenclature for all classifications working on the project.

k. Spot check payrolls for correctness of rates, fringe benefit payments and for improper deductions.

l. If the Contractor is consistently tardy with the submission of payrolls or payroll correction, submit a notification, in writing, as to the corrective action required and a specific time period in which to comply. Advise the Contractor as to what action(s) will be taken if the corrections are not made within the time limits specified.

J. Civil Rights

The Utah Department of Transportation external Civil Rights Program functions under the direction of the UDOT Executive Director of Transportation. The Engineer for Construction & Materials is responsible for the management of the Civil Rights Program.

UDOT's Engineer for Construction & Materials delegates authority and responsibility directly to the Civil Rights Manager. The Deputy Director then delegates authority and responsibility to each of the Region Directors, through channels to the Region Project Manager, Resident Engineer and Region Equal Employment Opportunity Officer.

The Resident Engineer is delegated the authority and responsibility for the day to day monitoring of the Contractor's compliance with the Equal Employment Opportunity contract provisions and Disadvantaged Business Enterprise Provisions of the contract. A Project EEO Officer may be appointed by the Resident Engineer to accomplish the routine portions of monitoring the Contractor's Equal Employment Opportunity and

Disadvantaged Business Enterprise Programs. This person reports to and acts under the direction of the Resident Engineer.

It is the Region E.E.O. Officer's responsibility to monitor each Resident Engineer's efforts. They should make recommendations as warranted for improvement of Contractor's compliance efforts under the Equal Employment Opportunity and Disadvantaged Business Enterprise Special Provisions of the contract. It is their responsibility to conduct project inspections to monitor compliance at the project level, to assist and provide guidance.

The authority and responsibility to conduct Equal Employment Opportunity contract compliance reviews is vested exclusively in the Civil Rights Manager and staff as designated.

Knowledge of and frequent reference to the Civil Rights Program Manual should be made for guidance.

Guidelines For Monitoring Contractor's E. E. O. Compliance

MOI Chapter 12 - Form C-130

The Resident Engineer is responsible for the day-to-day monitoring of contract compliance and equal employment opportunity within the Special Provisions as follows:

A. Prior to construction on the project, the Resident Engineer should be furnished the following items:

1. Five (5) copies of the Contractor's Affirmative Action Plan for approval. When the Civil Rights Office has given prior approval for the current construction year, only one copy updated for the project is required for the project file.

2. .The Contractor's written commitment towards satisfying the E.E.O. training requirements of the contract. Contractor's commitment should contain the following:

a. Number of trainees to be trained in each selected classification.
b. Training program to be used.

c. Approximate starting time for each trainee.

3. Name of Contractor's E.E.O. Officer.

a. Project

b. Company

B Monitoring of the project site.

1. Inspection of the project site for required notices and posters. Use Form C131 for documentation.

a. Project bulletin boards must be adequate and readily accessible to all employees on a 24-hour basis.

b. The bulletin board should contain the following notices and posters:

1. Notices to Employees Working on Federal or Federally Financed Construction Projects.

2. E.E.O. Poster "Equal Employment is the Law" (Bi-Lingual)

3. Forms 1495 & 1495A, Wage Rate Information (Bi-Lingual)

4. PR-1022 (False Statement Poster)

5. WH-1321 (Labor Poster)

2. In addition to the posters presented to the Contractor at the Preconstruction meeting, the Contractor is required to post the following:

a. Company E.E.O. Officer, address and phone number, (include subcontractors).

b. Company E. E. O. Policy, (including subcontractors).

c. Prevailing wage rates, (found in the contract proposal).

d. Notice to encourage present employees to refer minority group applicants.

C. Dissemination of E.E.O. Policy

1. In addition to notices and posters, the Contractor is required to hold periodic meetings where E.E.O. is discussed.

a. Attend Contractor's E.E.O. meetings whenever possible.

2. Take a good cross section of the Contractor's work force when conducting labor and E.E.O. interviews.

3. Follow-up on all negative interviews to assure Contractor compliance.

4. Maintain adequate documentation for project file.

D. Periodic inspections of working conditions and facilities.

1. Inspect for segregated sanitary facilities, assignment of equipment, work assignments and segregated forces.

2. Conduct labor and E.E.O. interviews monthly to assure non-discriminatory treatment of personnel. Use Form C-136 for documentation.

E. Training and Promotion

1. The Contractor must follow the training program as approved by the Resident Engineer.

2. The Contractor is not to receive credit for training hours until the Resident Engineer has received a copy of the registration form certifying that the trainee is enrolled in an approved program.

3. Conduct labor and E.E.O. interviews with all trainees on the project to determine the following:

    a. Trainee has received a copy of their training program, when not enrolled into a Union Training Program.

    b. Trainee is receiving training as outlined in the program.

    c. Trainee is satisfied with the training being provided.

    d. Trainee is receiving a record of their training monthly progress report when not enrolled in a Union Training Program.

    e. To determine if the Contractor has taken affirmative action to enroll minorities and women into training programs, 50 percent of trainees should be a combination of minorities and females.

F. Minority and Female Participation Goals

1. The Contractor is required to take affirmative action to ensure equal employment opportunity for minority and female participation in each of the crafts.

    a. Periodic site inspections of the Contractor's work force.

    b. b. Review Contractor's weekly payroll.
    c. Review Contractor's monthly E.E.O. Report Form PR-1391.

    d. Advise the Contractor when employment goals are not being met.

    e. Maintain adequate documentation for project file.

G. Monitoring of DBE Subcontractors

1. Approved Subcontract Agreements

    a. Subcontracts must contain the same items of work with dollar amounts as shown in the Contractor's commitment letter.

2. Performance

    a. Conduct labor and E.E.O. interviews.

b. Monitor equipment being used by the subcontractor. Subcontractor may not lease, borrow or rent Prime Contractor's equipment.

c. Make sure that DBE firm is working independently of any outside source.

d. DBE firms are required to comply with all the Special Provisions of the contract including equal employment, material supplies and workmanship.

e. Questionable operations should be brought to the attention of the Civil Rights Office.

f. Maintain adequate documentation.

g. Subcontractor's work force and Prime Contractor's work force should not work for both Contractors.

H. Compliance to DBE Commitments

1. DBE Contractor must perform those specific items of work as outlined in the Prime Contractor's commitment letter.

2. If the Contractor chooses to alter the subcontract agreement or substitute DBE firms in place of those named for contract award purposes, they must provide written justification for the Department's approval.

3. DBE firms are required to have prior approval from the Civil Rights office before subcontracting items of work to other non-DBE firms.

I. Satisfying DBE Commitments

1. Money held in retention does not count towards satisfying DBE commitments. Compliance to the goal is based upon actual monies PAID to each DBE firm.

3. Prime Contractor is required to submit a certificate, in the form of an affidavit, certifying the total amount of money paid to each DBE firm.

J. Harassment, Intimidation and Coercion

1. The Contractor is required to disseminate to all employees, including subcontractors, their policy regarding harassment, intimidation and coercion. Documentation from the Contractor must be on file in the Resident Engineer's office. E.E.O. Form C-133, should be furnished to the Contractor at the preconstruction conference as an example of the required documentation.

K. Legal Services

1. Legal Representative The Attorney General of the State of Utah is the legal representative for all departments and divisions of State government. Each

project will have an Assistant Attorney General assigned as a legal representative.

To improve the effectiveness of the Construction Division's legal representative, the Resident Engineer should comply with the following instructions:

a. Contacting Legal Representative

The legal representative is available at all times to assist at the project level. The usual method of contact is by telephone. Document your contact with the Attorney in the project diary. It may be necessary to have an exchange of memoranda and/or a series of meetings. In order to have complete control, it is necessary to include the Region Project Manager in the proper place of Authority in all actions involving the use of State furnished legal services. Use of this system can provide for legal representation at meetings with the Contractor and visits to the project by the assigned attorney.

b. Documentation

For various reasons it is often necessary to refer to the project diary to ascertain project information. A diary entry, which is properly dated and signed often, fails to prove a point because the entry does not record what happened at the meeting. The particulars of all parties involved in a meeting and discussion or exchange of ideas should be recorded to be of any help in solving a problem. Points of agreement and failure to agree should be recorded. A follow-up memorandum to the parties involved often proves beneficial. When critical items are discussed it is suggested that rather than recording impressions, conclusions or summaries that specific statements made by individuals be recorded along with the name of the person making the statement. This lends credibility and aids the author of the diary to recall the conversation if necessary at a later time.

c. Meetings Attended by Attorneys

In those instances where legal counsel for the Contractor is present, delay the meeting until a representative of the Attorney General can be present. Do not try to judge the legal significance. Get assistance.

d. Agreements

The Attorney General confirms, in cases where legal services have been requested, the need to execute an interim agreement (Change Order) prior to permitting extra work to begin. In some instances it is recognized that agreements are entered into to correct deficiencies in performance by the Contractor or to meet specification requirements. The work is often at the Contractor's expense or will adversely affect their profits. In these instances the agreements should carefully document the reasons for the agreement and the references should be made to test results, which indicate poor

performance. The Contractor will not be able to later claim they were coerced into signing the agreement or payment should be made for additional work under the representation the original work was adequate. Standard Specifications 01282

e. Correcting Errors or Mistakes

Frequently in source documents, mistakes are made in recording data or calculations. Never erase data from a source document. Simply line out the error, make the change and initial it. Always leave the changed data in readable condition. Failure to follow these procedures will lead to costly litigation. If a changed document is received from a Contractor, the

Contractor will also initial any changes. Manual Of Instruction Chapter 10.4 - Field Books

f. Correlation Between Contract Documents

Much of this activity is beyond the assigned duty of a Resident Engineer. The Resident Engineer should be aware that plans, specifications, proposals, etc., do not always agree. They should know how to suggest solutions, but will also be aware they do not have the authority to make all of the decisions, which might be necessary to resolve the dispute. Occasionally, there are ambiguities contained within the framework of the contract and/or the special provisions and the standard specifications. These are usually discovered prior to the beginning of construction or are discovered as the work progresses. When these discrepancies are discovered, a prompt resolution should be reached so there is a meeting of the minds between the Department and the Contractor. If a resolution cannot be effected within the framework of the standard specifications or partnering charter, which sets out an order of precedence, then legal guidance should be sought.

There are numerous things, which can cause problems in interpretation, and unless they are promptly resolved, they can affect relations between the parties and can be detrimental to either party. Often items that cannot be agreed upon can be deleted from the contract to the benefit of either party or both.

Frequently, either one or both of the parties will adopt an interpretation favorable to their individual liking, and an impasse develops. It is suggested that if this is the case, submitting the question to an impartial arbiter, dispute resolution board, or partnering can resolve some disputes escalation process for a resolution, or in extreme cases, it may be necessary to seek a court resolution of the problem. Generally, the lower the level at which an impasse is settled, the more satisfactory the solution is to all concerned. In the case of contract language, which is ambiguous or is capable of more

than one "reasonable" interpretation when looked at in the context of the contract provision where it exists, the general rule is that the Contractor's interpretation will be favored because the Department created the ambiguity. If the ambiguity is a "patent" or obvious ambiguity, then the Contractor is required to seek clarification prior to bidding or be subject to the Department's interpretation. If the ambiguity is one that is not obvious, it is considered to be a "latent" ambiguity and the Department is liable for the consequence.

g. Handling Claims

In those instances where a Contractor files a claim, they should first be asked to fully document and support the claim and cite any contract provisions or specifications upon which they intend to rely and their reasons for so relying. The Resident Engineer will then make their own determination, if possible, or seek assistance through normal highway channels, and if a resolution is obvious, the claim should be answered promptly. In any case, where a claim is to be denied, the reasons for the denial should be set forth with specificity. In these instances, the Resident Engineer may want legal counsel to review it for any legal implications, which may be inherent therein. Standard Specifications 00727 Policy & Procedure Manual- Procedure 08b-91.1

h. Interpreting Specifications and Special Provisions

One of the serious areas that are occasionally encountered is a failure to insist on contract compliance in one area and then a later attempt to hold to the letter of the contract in another. If the contract is deviated from in an area, the reasons should be spelled out in detail so that a later attempt on the part of the Contractor to justify their failure to meet a contract provision is not excused by the Department's relaxation of contract requirements in another area. It is recognized that frequently Project Engineers are called upon to make judgment decisions, and they should not hesitate to do so provided they are convinced their judgment is correct or justified. A memorandum or a diary entry explaining in detail the reasons for the decision can often avoid embarrassment or adverse effects if Resident Engineer is called upon to defend their decision or actions.

i. Defiant or Unwarranted Action by Contractors

Occasionally, a Contractor will defy the authority of the Resident Engineer or a subordinate. It is imperative in these instances, a complete record be made and a prompt resolution of the problem be sought and carried out. In those instances where a shutdown order is the only recourse, the reasons for that order should be spelled out in the order itself, and if possible, memorandums or diary entries should be made by other project personnel to support the records made by the Resident Engineer. A shutdown order

can have drastic consequences from a financial standpoint to a Contractor and should be used only as a last resort, when reason and common sense have been exhausted.

j. Rights of Third Parties (Property Owners, Utility Companies Irrigation Companies, etc.)

Close cooperation should be developed and encouraged between the Contractor and the Department where rights of third parties are involved, such as access, fences, ditches, items of personal property left within the right- of-way, stray livestock problems, traffic problems, signs, warning devices, detours, etc. In all of these areas the Contractor and the Department should cooperate closely since the legal consequences of defaults or improper performance in these areas can have drastic effects to the Contractor, the Department, or both.

Any time either of the parties feel that certain actions would be appropriate and a question arises as to how payment should be handled, it is better for the work to be accomplished or action taken with the provision that the parties reserve their respective rights for a later determination of who pays the bill.

The Department and the Contractor can be embroiled in a dispute over who should pay for a certain action, the Department or the Contractor, and meanwhile a third party is being damaged. From the third party's point of view it is not a question of who pays, but when will the damage be mitigated. Close cooperation should be encouraged and insisted upon between the Department and the Contractor in any area where a third party is involved.

The Resident Engineer can frequently make contact with a third party where a Contractor may have alienated that party by their actions. The Resident Engineer should be available to offer assistance where relations have been strained and should attempt to negotiate a satisfactory resolution of any outstanding problem. The Resident Engineer should act as a mediator. If there is a dispute between the third party and the Contractor, and if there is a question about whether the Department will be involved thereby, then legal assistance should be sought before commitments are made.

k. Lines of Authority

The Contractor and the Department should define early in any project the lines of authority. There should, at all times, be a representative of the Department present on the project who has the authority to make decisions, and likewise, the Contractor should be required to have a responsible party prepared to make decisions. If the authority is to be limited in the absence of either the Project Superintendent or the Resident Engineer, then the

authority of subordinates should be clearly defined, and provisions made for early decisions on problems beyond the scope of the authority granted the subordinate in either instance. The escalation process established during Voluntary Partnering meetings, serves this purpose well.
Standard Specification 00727

l. Federal Citations

The best way to approach Federal citations for noncompliance is to assemble all the facts. Statements should be obtained from parties having knowledge of the situation, both from the Contractor as well as Department personnel. If the Contractor has any documentation, which would be helpful, a request should be made to the Contractor to supply information.

Legal counsel should be sought in those instances where specification interpretation is involved, or where Federal participation is denied on the basis of specification interpretation and/or determinations of a legal nature have been cited by the Federal authorities as grounds for denial. There is no substitute for the "facts". If enough facts can be assembled, participation can be secured in most cases.

m. Right of Way Matters

In the course of Right-of-Way Acquisition for Highway Projects it sometimes becomes necessary for the Department or other public agencies in the public interest to exercise the Power of Eminent Domain and acquire right-of-way for highway improvements by condemnation proceedings. Oftentimes the stipulations on condemnation are developed late in the project development process such that there is insufficient time to provide for commitments made to property owners in connection with condemnation actions prior to project advertisement.

The Resident Engineer should contact the Region Right-of-Way Engineer to request a copy of the Judgment on Stipulations or other information on commitments to property owners that is available either from the Right-of-Way Division or the Assistant Attorney General's Office. This information will enable the Resident Engineer to address the Department responsibilities to property owners affected by condemnation proceedings.

If the Resident Engineer becomes aware of specific problems in connection with right-of-way acquired through condemnation, the problems should be brought to the attention of the attorney handling the condemnation. This can be done by a simple memorandum or phone call to the Attorney General's Office. There are many small problems which could be handled with a little coordination between the attorney, the Resident Engineer, and the Contractor, while the Contractor is still working on the project which would greatly minimize potential damages in condemnation suits and would also

enhance public relations. Generally, the attorney handling the condemnation case is responsible to see that court directed settlements are carried out. However, this can only be accomplished effectively by coordination with the Resident Engineer. A close liaison should be established between the Resident Engineer and the Attorney General's Office with regard to right-of-way problems. Project Engineers are sometimes asked to testify, and we suggest that early coordination between the Resident Engineer and Attorney General is essential and can provide time necessary to prepare exhibits and review facts, which the Resident Engineer will be expected to know.

n. Test Results

Test results should be furnished to the Contractor promptly, particularly those which indicate that specification requirements are in non-compliance. Care should be taken to insure that personnel doing testing follow outlined procedures and they are properly trained and certified. Any independent testing done by the Contractor will be checked as to the manner in which it is done; the capabilities of the test personnel and results should be requested for review and comparison with the Department's test results. Any discrepancies should be resolved promptly.

If alternate test procedures are to be used, this should be brought to the attention of the Contractor, and any objections should be handled before proceeding with the testing program.

It will be pointed out to the Contractor that tests performed by independent testing firms are not acceptable to the Department and the resolution of the problem will be handled by use of Department owned and operated testing facilities.

o. Complaints and Discrepancies

When complaints or discrepancies are discovered, they should be checked out independently by anyone charged with reviewing or investigating these things. For instance, the Contractor alleges that project personnel are doing testing improperly. The Resident Engineer or possibly the Region Materials Engineer will conduct an investigation of the matter. The investigation should be in sufficient detail to form an independent opinion of adequacy of the testing without relying on representation of the personnel being checked.

p. Repeated Instructions

The legal services available are for use by the Resident Engineer in the performance of assigned duties. The only way an organization such as the Department of Transportation can function properly is for all parties involved

in a problem to be aware of its conditions. Inform the Region Project Manager of contacts with the Attorney General.

Prosecution and Progress

This section of the Standard Specifications establishes the Contractor's responsibility to furnish adequate forces and equipment for meeting specified project schedules as well as quality. Unsatisfactory progress should be directed to the Contractor's attention in writing. If the Contractor fails to act in keeping with the intent of this section, the matter should be directed immediately to the attention of the Region Project Manager. All time assessments must be supported by adequate diary information. Review of project history often must rely heavily on diary entries.

A. Notice to Proceed

The Notice to Proceed is prepared and distributed by the Construction Division. The Notice to Proceed is the contract date.

B. Subletting of Contract

The Standard Specifications provide that the Contractor should perform with their own organization, contract work amounting to not less than 30 percent of the original contract cost.

No portion of the contract should be sublet, assigned or otherwise disposed of except with the written consent of the Resident Engineer or authorized representative and such consent, when given, should not be construed to relieve the Contractor of any responsibility for the fulfillment of the contract.

When portions of the contract are sublet, the Prime Contractor continues to be the legally responsible party for the administration of the contract. All instructions, orders, changes or other contract matters pertaining to the subcontractor's work should be directed to the Prime Contractor. The Resident Engineer and the inspector must be careful to maintain the proper channel of communication and to maintain the Prime Contractor's role under the contract.

Subcontracts should be reviewed and approved by the Resident Engineer before the Subcontractor is permitted to work. Do not approved DBE Subcontracts if they don't comply specifically to bid items and dollar amounts committed by the Contractor for DBE compliance. This DBE commitment information is supplied to the Resident Engineer with the Notice of Award. Items should be listed in the subcontract by the same item number, item description and as nearly as possible in the same order as they appear in the bid proposal.

C. Subletting Portions of the Contract

Requests by the Contractor for subletting are submitted on Form C-115, (A Request to Sublet) and are approved by the Resident Engineer. The request must be formally

processed and approved by the Resident Engineer prior to the performance of any work on the project by the subcontractor lower tier subcontractor.

For Federal-aid projects, Form C-116, (Contractor and Subcontractor or Lower Tier Subcontractor Certification for Federal-aid Projects) must be submitted with the Request to Sublet.
If subcontractors want lower tier subcontractors to perform part of their

Work, the Contractor submits the 'Request to Sublet' for approval of the lower tier along with the 'Request to Sublet' the work. If more than one subcontractor on a project wants to use the same firm as a lower tier subcontract, separate requests for approval are required.

Standard Specification 00555 sets forth the procedure for subletting portions of the project, and the percentage of the contract, which may be sublet.

The Request to Sublet is processed as follows:

Prime Contractor	? Completes the **Request to Sublet, Form C-115.** Includes the actual amounts to be paid to the subcontractor for each item. Signs the form and submits to the Project Engineer. ? For Federal-aid projects, completes and attaches **A Contractor and Subcontractor or Lower Tier Subcontractor Certification for Federal-aid Projects, Form C-116.**
Project Engineer	? Responsible for the **adequacy and accuracy** of the completed form prior to approval. ? Completes the **Percent of Total Contract** section by calculating the percentage of work being subcontracted. ? Verifies the Contractors compliance with the original DBE commitment by checking the **DBE box** and indicating the **actual dollar amount committed** to the DBE subcontractor. ? **Signs** and **distributes** original and copies as indicated on bottom of form. ? During the Process Reviews, randomly***** checks with Subcontractor(s) to ensure they have received the required Federal attachments identified on Form C116. Randomly***** requests a copy of the subcontract agreement for verification. Documents compliance/non-compliance on Form C121, AUDOT Region Construction Monthly Project Process Review@. *****(Selects 1 subcontractor out of 10, with a minimum of 1 per project).
Construction Division	? Inputs subcontract information into **construction database**. ? **Maintains original Request to Sublet@ and Contractor and Subcontractor or Lower Tier Subcontractor Certification for Federal-aid Projects@ forms**. ? Reviews the Process Reviews conducted by the Regions to ensure Contractors have provided Subcontractors with the Federal attachments identified on Form C-116. Deputy Construction Engineers will also address this issue during the project inspections.

The Contractor is responsible for providing a full set of these inclusions to the Subcontractor.

The Resident Engineer should review these subcontracts and compute the percentage requested to be sublet from the contract prices for the items. The accumulated percentages of all approved subcontracts must be considered in order that the maximum amount will not be exceeded. In computing percentages, an item, which is partially subcontracted, must be calculated as a percentage of the complete item based on the comparative dollar value and must be indicated as a "partial" of the bid item on Form C115.

Lower Tier Subcontractors

Approved subcontractors will be allowed to re-sublet any part of their assigned work to lower tier subcontractors providing that the following provisions are complied with:

1. Should any first tier subcontractor desire to dispose of any part of their assigned work, a formal request should be made to the Prime Contractor requesting such action. The request must show the name and address of the proposed lower tier subcontractor, item number, description of item, quantity, unit, price and amount.

2. The Prime Contractor should make a written request on behalf of any tiered subcontractor to the Department for approval. If a DBE subcontractor makes a request to enter into a lower tier subcontract, the Prime Contractor must obtain approval from the Division of Civil Rights.

Subcontractor Versus Supplier

The term subcontractor applies to physical work on the project and does not include the purchase of materials or supplies with which the work will be done. Therefore, a firm, which performs a physical portion of the work, that when finished becomes an integral part of the completed project, and performs such work at the job site or expressly for the project, will be considered as a subcontractor. When a firm sells material to a Prime Contractor and also performs the work of incorporating the material into the work, the two phases of work will be considered as constituting a single subcontract.

If on the other hand, the Prime Contractor purchases material from a supplier and subcontracts the installation of the material to a firm other than the supplier, the purchase of the material will be considered as work performed by the Prime Contractor, and the installation will be partial subcontract. Partial subcontract amounts will be based on the quantity multiplied by a unit price determined by the ratio of the value of the work performed to the unit bid price of the item.

A fabricator, or supplier, is one who fabricates or processes an item off the job site and delivers such to the project. They need not be authorized as a subcontractor providing:

1. The supplier does not perform a function which is a part of the construction process itself, i.e., placing barrier, spraying asphalt onto the roadway, erection of bridge members, grading and compacting surface materials, etc.

2. The supplier does not establish a fabricating or processing facility expressly for the use of the project, i.e., direct use of a Department material pit for the project, relocation of processing plants where the project is the only recipient of the product, etc.

3. The supplier, in producing and delivering materials, does not perform any work on the project.

D. Progress Schedule

The Department is obligated to expeditiously provide usable facilities for the public in keeping with timing commitments made during public hearings and to affected municipalities and organizations.

Timely completion is also essential to the project because the cost to the Department for the administration of the contract including engineering, inspection and supervision will increase as time required to complete the work is increased.

Evaluation of progress is made by comparing the work completed to date with the Contractor's progress schedule. The progress schedule provides a means of measuring the Contractor's progress throughout the life of the project. Early detection of deficient progress is critical to preventing or mitigating delays in project completion. The Resident Engineer should be alert to detect delays or lack of progress on the project. Such delays should be brought to the attention of the Contractor and the Region Project Manager. If construction falls significantly behind schedule, the Resident Engineer should request a revised schedule.

The Standard Specifications allows the Contractor to submit the progress schedule in the form of the "Critical Path Method Schedule".

1. Critical Path Method Schedule Prepared by the Contractor

Supplemental Specification 00555

The Critical Path Method (CPM) of planning construction activities will be required on all projects unless otherwise specified in special provisions. The CPM schedule provides the Contractor and Resident Engineer with a graphic means of planning, scheduling, estimating and controlling construction projects.

The CPM approach to planning and scheduling answers three basic questions in the area of project control:

a. What specific work must be accomplished and in what sequence to complete the project within the specified contract time? For this purpose the CPM shows activities and their interrelationships -- what must precede each activity, what comes next and what can be accomplished at the same time.

b. When must certain jobs begin and end to keep the overall project "on schedule"? When event times are added to the CPM schedule dates for specific work and other important schedule times can be estimated.

c. Is the project progressing in a satisfactory manner? Not only does the CPM schedule show the overall progress anticipated, but it shows at a glance the anticipated progress of each individual activity. Delays can be evaluated quickly in terms of their effect on the overall project as well as their effect on related activities. An understanding of the following terms is important to those who will be reviewing and using a CPM schedule:

1. Activity - Any definable, significant and time-consuming task, operation or function to be executed in a project.

2. Critical Path - That longest sequence of activities in a project, which establishes the length of time for accomplishment of the end-event of a project. As far as we are concerned this Critical Path will encompass a duration time equal to or less than the established time limit.

3. Dummy - A line on the CPM that has no time value and is not an activity, but is necessary to illustrate sequence of the activities.

4. Duration - Length of time, estimated by the Contractor, needed to complete an activity.

5. Event - A point in time that marks the end of one activity and the beginning of the subsequent activity.

6. Event Times - The Earliest Starting Time, Latest Starting Time and corresponding finish time are used to determine Float time. Earliest start and latest finish of an activity, which would include float time are sufficient for most CPM schedule.

a. Total Float is the difference between the time that is available to do an activity and the time required for that activity. Total Float is the slack or leeway time for each activity that is not on the critical path.

b. Free Float (FF) is the time by which an activity can exceed its early finish without affecting the early start of the following activity. FF = Early Start of the following activity - (ES of activity + duration). Free float has little practical use in scheduling but is mentioned because it is characteristically included in computer programs.

7. Forward Pass Backward Pass - The adding and subtracting procedures used to determine start and finish dates, or Event Times, and to determine Float.

When the Contractor submits the CPM schedule, certain items can be checked without spending too much time on the evaluation. The amount of checking or reviewing for any one CPM schedule depends on the complexity of the CPM schedule and the time available. Sufficient time should be spent on the check to assure that the CPM schedule has been properly prepared. Along with a rough check on the aforementioned items, it would be well to review the sequence of activities enough to pinpoint any apparent errors.

After the CPM schedule has been reviewed and you are assured that it has been properly prepared, it can be put to use as a very useful tool in the evaluation of the Contractor's progress. The Resident Engineer should keep the CPM schedule current as to the days actually spent on each activity and color in or otherwise note on the CPM schedule when each activity is complete. Any delays in the construction of the project can also be noted on the chart along with the specific reason for the delay. Knowing how long each activity should take and the Float Time, you can readily see what effect delays have on each specific activity as well as the effect, if any, on the overall completion date. The Contractor's CPM schedule, along with any notes the Resident Engineer places on it during the course of the project, would be very helpful in considering extensions of time, during the course of, or at the completion of the project.

The effectiveness of the CPM schedule depends largely upon the effort that goes into its preparation and its use during the course of the project. If the CPM schedule is prepared only because it is required by our specifications and if we simply file it away, the whole effort will be wasted. The CPM schedule should be revised and/or updated as often as is necessary, (at least monthly) to reflect changes and/or delays. The Contractor should prosecute construction in reasonable close conformance with the CPM schedule or current revision.

E. Limitation of Operations

This section of the specifications gives the Resident Engineer authority to alter the Contractor's sequence of performing the work when essential for public convenience. Such authority should be exercised with discretion because in some situations alterations in the Contractor's plan, or sequence of performing the work, could increase their cost to a major degree, the result of which might be the instigation of claims.

In cases where public health and safety are involved it is necessary to impose the Department's authority under this section.

Where time will allow, serious interruption or changes in the Contractor's work plan should be discussed with the Region Project Manager.

F. Character of Workers

Poor supervision, inefficient workers and inadequate or worn out equipment will contribute to poor progress and sometimes unsatisfactory work. Unsatisfactory progress frequently results in requests for time extension.

The Resident Engineer should make frequent observations of the Contractor's operations, equipment and personnel so that complete information about the adequacy of workers and equipment will be available.

Removal of the Contractor's personnel is a very serious action that must be entered into with caution. Every effort is to be made to keep relationships on an impersonal basis. In cases where the Contractor's workers are intemperate or disorderly the instances are to be well documented in the project diary and notice is to be given to the Contractor to take corrective action, including removal of workers or supervisors who are causing problems. Every effort should be made to remedy a bad situation before a request for removal is made.

The Department may require removal of work that is not acceptable because of unsatisfactory workers or equipment.

G. Methods and Equipment

The contract requires the Contractor to do the work using methods and equipment that will produce work of satisfactory quality in the time allotted.

A good record of equipment being used together with comments about its efficiency should be maintained.

When the contract calls for specific methods and equipment, the Contractor may request changes that can be allowed provided the changed methods and equipment produce acceptable work.

The request and the approval to make changes must be in writing and the approval will be conditional on acceptable work being achieved.

Thorough documentation is essential when changed methods or equipment are used. If the change doesn't work out acceptably it will be possible to justify and have the Contractor redo or correct the unacceptable work.

H. Determination and Extension of Contract Time

Contract time charges start on the date specified in the "Notice to Proceed". Periods where suspension of the work beyond the control of the Contractor, such as inclement weather, wet subgrade or other conditions or causes deemed by the Resident Engineer to be justifiable reasons for suspending the work on a working day contract.

The contract time may be increased if there is an increase in the quantities or if there is a "material change" in the "character of the work", thereby increasing the time required to perform the work. Requests for additional time must be in writing from the Contractor. When additional Contract Time is approved by the Resident Engineer, a Change Order should be prepared.

An increase in the cost of a project does not automatically justify an increase in time. When the Contractor requests additional time based on increase in the total cost of the project, their justification must show how the increased quantities increased the time needed to do the work.

The justification for increased time is to be prepared by the Contractor, not the Resident Engineer.

If the Contractor finds it impossible for reasons beyond their control to complete the work within the time specified in the contract, they may, at any time prior to the expiration of the contract, make a written request to the Resident Engineer for an extension of time setting forth the reasons which they believe will justify their request.

It is important that the Resident Engineer thoroughly document conditions that may develop into a basis for increased contract time. If the Resident Engineer finds that the work was delayed beyond the control, and without the fault, of the Contractor, the time for the completion may be extended in an amount proportionate to justified conditions.

Standard Specification 00555

I. Incentive/ Disincentive for Early Completion

Incentive/Disincentive clauses are used to better control the completion of all or part of a project. The intention of the clause is to pay the full amount so that the traveling public is inconvenienced the least. Several forms of incentives are used which include completion by a calendar date, completion within an allotted working day schedule, or according to the Contractors approved schedule.

The amounts of the incentives are predetermined during the preconstruction phase based on the Department's costs, anticipated road users costs, and time constraints among other aspects. The Special Provision for the project should provide sufficient definition of what must be done for the incentive to be paid. It is the best policy to decide at the beginning of the contract what the criteria are to be and spell them out to the Contractor so that there are no misunderstandings when the work is done.

J. Failure to Complete on Time

When a Contractor fails to complete a project in the allotted time or as adjusted for approved extensions of time, liquidated damages are assessed according to the "Schedule of Liquidated Damages". Careful consideration will be given to the circumstances in making such assessments. It is incumbent for the Resident Engineer

to keep accurate records of the dates and conditions on the project should a controversy arise over the assessment of liquidated damages.

Standard Specification 00555

K. Termination by Default

This type of termination covers situations where the Contractor fails or refuses to perform according to the contract provisions. When a contract is terminated for default, the Department has the right to the completed contract at the bid price and the Contractor (or surety) will be responsible to reimburse the Department for any cost incurred above the bid price. If the contract is terminated for default, the Deputy Director upon the recommendation of the Resident Engineer and Construction Division must take the action. The action must give the Contractor and their surety 10 calendar days notice, during which time the termination can be avoided if the Contractor and/or the Contractor's surety reaches agreement with the Resident Engineer for corrective action. If no such agreement is reached, the contract will be terminated and neither the Contractor nor their surety will be allowed to perform the work or to receive any further payment until the Department has the work completed by other means.

L. Termination of Contract for Convenience of the Department

This type of termination covers situations where, due to no fault of the Contractor the Department finds it necessary or in the public interest to terminate the contract. The Deputy Director will give the Contractor written notice of the termination. The Department will pay the Contractor for the portion of the contract completed at the contract price, or portion thereof.

Also see Standard Specification 01282: Eliminated Items. The Department may abandon or complete the project, as it deems appropriate.

M. Safety Requirements

Safety is extremely important. All personnel working for the Contractor and the Department should work diligently to attain safe working conditions.
Policy & Procedures Policy 05-d-2

1. Personnel

   Each Resident Engineer should hold weekly 10-minute safety meetings with the crew to give thorough instructions to employees on the safe use of tools, materials, and equipment and the safe prosecution of work projects. The Region Safety/Loss Control Manager can be called upon to assist in these meetings. All personnel working on or visiting construction projects should wear hard hats in designated hard-hat areas. Each project field office should keep extra hard hats for authorized visitors. Safety colored clothing and protective clothing should be worn as specified.

2. Accident Prevention Plan

   Refer to:

   Utah Department of Transportation Construction Safety and Health Manual

   Web site:

   http://www.udot.utah.gov/download.php/tid=110/UDOTSftyManual.pdf

   The National Occupational Safety and Health Act (OSHA) requires all employers to provide a safe working environment for their employees. In the performance of the Contract, the Contractor should comply with all applicable Federal, State and local laws governing safety, health and sanitation. The Contractor should provide all safeguards, safety devices and protective equipment and take any other needed actions.

   The Department, when reasonably necessary to protect the life and health of employees on the job and the safety of the public, should notify the Contractor to take corrective action. To insure active involvement and awareness of the Contractor's safety program and procedures, the Resident Engineer or designated representative, is encouraged to periodically attend safety meetings held by the Contractor on the project.

   The Resident Engineer and Region Safety Risk Manager will monitor Contractors and Subcontractor's implementation and application of their respective safety programs at the work site. The Resident Engineer and Region Safety Risk Manager have the authority to stop work when either site conditions and/or work practices present an imminent danger (i.e. may result in serious injury death or extensive property damage)

   In addition to the Construction Safety and Health Manual the Contractor is required to address specialized situations, in writing as requested by the ENGINEER, throughout the Contract.

   The Contractor has full responsibility for reading and following the Utah Department of Transportation Construction Safety and Health Manual before start of project work and further commits to indemnify the Department from any liability related thereto.

   Nothing in the Contract shall relieve the Contractor of responsibility for safety, State Industrial Commission's requirements, or State and local laws and ordinances. The Accident Prevention Plan must be approved before any work is done on the project.

3. Flaggers

   All flaggers are required to attend flagging school where they will be instructed in proper procedures for handling traffic. Copies of the booklet "Instructions to

Flagmen" should be furnished the Contractor. Each flagger who passes the examination after attending the flagging school will receive a flagger's card, which must be renewed every 3 years.

Flaggers should be used when conditions are especially hazardous due to heavy traffic, restricted sight distance or where other potentially hazardous conditions may exist. Flaggers should always be provided when employees are exposed to a potential hazard for periods of short duration and the work does not warrant use of the portable warning signs.
Flaggers must wear proper uniform and use specified flagging equipment. Flaggers are inherently exposed to high hazard traffic. The use of flagging stations is discouraged if at all possible.

4. Traffic Control

The placing of signs by the Contractor must be satisfactorily completed in compliance with the Traffic Control Plan and Manual on Uniform Traffic Control Devices prior to the start of any work on a project. The Resident Engineer and Contractor are responsible for the inspection and proper maintenance of traffic control devices for the life of the project. This responsibility continues during times of suspension of the work. (Use Forms C110 & C110A to document inspections). During long suspensions, the Resident Engineer may not be located close enough to the work to exercise proper control. For this reason, the following procedure should be followed when these conditions exist:

a. The Resident Engineer should obtain concurrence from the Region Project Manager for the alternate arrangement.

b. b. If Maintenance is used as an alternate arrangement for review of the temporary traffic control, the Resident Engineer will review with

c. Either or both the Region Maintenance Supervisor and/or the Station Foreman, the traffic control devices and markings. The Supervisor or Foreman, at the request of the Resident Engineer, should record in a diary a record of weekly visits and any changes observed or action required.

d. The Maintenance Standards Panel on January 9, 1980, agreed to cooperate with Construction in this regard.

5. Traveling Public

The traveling public should be protected from danger due to construction operations. Adequate barricades and signs should be placed where they are most effective. This should be done in accordance with the Manual on Uniform Traffic Control Devices. If needed, flaggers should be provided. There should be no doubt, when roads are completely closed and where detours are located. When signs and barricades have served their purpose, they should be

removed. Adequate illumination should be provided for night work. All vehicular accidents within a construction site should be reported as soon as possible to the Region Safety/Loss Control Manager "whether involving construction activity or not"

6. Hazardous Materials Accidents

   Due to the possibility of serious personal injury and property damage, Department employees are encouraged to be familiar with the procedures to take if they are involved in or see an accident involving hazardous materials. Instructions should be given periodically to employees as to the proper procedures for reporting an accident involving hazardous materials or other potentially hazardous conditions.

   The following is a guideline for reporting a hazardous materials accident:

   a. If possible, determine the type of material and if the container is damaged.

   b. Notify the Region Safety/Loss Control Manager.

   c. Identify the call as a Hazardous Materials Emergency and give the following information:

      • Your name

      • Location of the accident

      • Type of material involved, if known

      • Damage to container or material

   d. Notify the assigned Resident Engineer and Region Project Manager.

   Remember, accidents don't just happen they are caused. Do your part to help prevent them by being safety-minded at all times.

Measurement and Payment

This subject is extremely important and has many facets. For this reason, a chapter has been devoted, in large part, to that subject. Chapter 10 of this manual, entitled, "Documentation", covers the subject of measurement and payment in detail; also, item documentation in Chapter 10 lists contract bid items and shows the basis of payment and method of documentation, for each item. The records on which payment is based must reflect measurement and calculations together with any necessary explanatory notes that will provide an accurate record of the actual work done.

A. Payment for Stockpiled Materials

Payment for materials stockpiled on a project site by a Contractor for future incorporation into a project are paid in accordance with the Standard Specifications, 01282(1.14).

B. Acceptance and Final Payment

Within thirty days after completion of the project, the Resident Engineer will hold a post construction conference. The major purpose of the conference is to provide information so improvements in the plans may be made, not to direct criticism toward the Department or the Contractor. Contractors and Subcontractors are encouraged to make constructive comments about the design (build ability) of the project and the completeness and accuracy of the plans. Comments and suggestions for improvement should be submitted to the Construction Division during the post construction conference.
The timely processing of the final estimate should be addressed and solutions to problems resolved.

The purpose of this conference will be to discuss the following items:

- Any discrepancies noted at the time of the final inspections which must be corrected before the final estimate can be paid. Documentation requirements that the Contractor has not met that will delay preparation and submission of the final estimate.

- Discussion of any items, which the Contractor feels, may be the basis of claims for additional payment. An attempt should be made to settle any claims at this time.

- Price reductions for non-specification material, which have been assessed or will be assessed on the final estimate.

- Discuss Contractor and project crew evaluations. (Forms C119 & C201).

- Status of contract time including possible liquidated damages for overruns in contract time when applicable.

- Final pay quantities as nearly as they can be agreed upon at the time.

- Date final estimate will be submitted for review to the Region Office. All final estimates should be submitted to the Region Office within 30 days after completion of work on the project. Where more than 30 days will be required, a full explanation as to the reasons for the delay is required. Whenever the expected date for submission cannot be met; the Resident Engineer should write a letter, through the Region Director, to the Engineer for Construction & Materials setting forth a new submission date

and explain the reasons for the delay. A copy of this letter will be furnished to the Contractor.

Construction Manual Appendix B

Document the Post Construction Conference using Form C199. A copy of the form will be sent to the Engineer for Construction & Materials, with the final estimate.

APPENDIX A
HOLDING A PRECONSTRUCTION CONFERENCE

1. Preparing for the Conference

A. Arrange for the:

Date

Time

Room

Agenda Handouts

Recorder

Exhibits, maps, etc.

B. Notify interested agencies and companies:

Prime Contractor and Subcontractors

Utilities

Railroads

County Highway Departments

Local Units of Government

County

Cities/Towns

Federal Agencies - FHWA, USFS, BLM (as needed)

State Agencies

UDOT

Region

Director

Project Manager

Construction Engineer

Preconstruction Engineer

Preconstruction Designer

Maintenance Engineer Materials

Engineer External E. E. O. Officer

Res./Resident Engineer's Crew

Others as needed

Construction Division

Engineer for Construction & Materials

Deputy Construction Engineer

Civil Rights Manager

Others as needed

- Traffic
- Safety
- Hydraulics
- Environmental

Other State Agencies

Attorney General
Wildlife Resources
Parks & Recreation
Highway Patrol
Others as needed

2. Directing the Conference

A. Register persons in attendance. Provide signup sheets for recording there: Name Agency or Company Office Address Office Telephone Is copy of the minutes wanted? Ask that all information be printed.

B. Distribute the agenda.

C. Appoint recording person.

D. Introduce attendees and direct the meeting: Summarize each major discussion. Excuse utilities and railroads after their portion of the conference is concluded, if they wish to leave.

3. Following up

A. Have the minutes and attendance sheet typed.

B. Distribute to: Attendees requesting a copy Region File Others who should be informed

PRECONSTRUCTION CONFERENCE MODEL AGENDA

1. General Information

Conference date Conference location Project number Project location County Prime Contractor Description of proposed work Contract execution date (Notice to Proceed) Original contract amount Contract time Anticipated starting date Anticipated completion date

2. Partnering

A. What is Partnering? Key Elements

B. Identify Stakeholders

C. Partnering Charter UDOT Goals Contractor's Goals

D. Conflict Resolution/Escalation Process

1. Authority and responsibility and names if known: Contractor's personnel Superintendent Work supervisors Department personnel Region Director Region Project Manager Deputy Construction Engineer Preconstruction Engineer Resident Engineer Inspectors Designer Others (if applicable) FHWA Consultant

2. Establish decision-making responsibilities and time line for escalation; "reps" authorized to make decisions for: Contractor Sub-Contractor UDOT Utilities Consultant (if applicable)

3. Line of communication between the Prime Contractor, UDOT, FHWA and Consultant (if applicable): Names/ addresses/phone numbers Region office Project field office Contractor FHWA (if applicable) Consultant (if applicable)

4. Partnering Champions Determine Champions - Owner/Contractor (s) List Measurable Objectives used to meet goals Evaluation Form (monthly)

3. Subcontractors

A. Names of proposed subcontractors: List of work operations to be sublet Names of authorized representatives plus work address and phone

B. Procedure for submitting request to subcontract to UDOT for approval: Need for the Department's approval before start of work by subcontractors.

C. Line of communication between the Department, subcontractors, and consultant (if applicable). Decision making commitments.

4. Suppliers

A. Names of proposed suppliers: List of items to be supplied Names of authorized representatives, plus work addresses and phone numbers

5. Contract Administration

A. Forms to be prepared and submitted by Contractor: Provide a separate list that shows the "when, to whom and how many" Furnish forms if applicable

B. Time charges: Computation of contract time charges Liquidated damages

C. Construction pay estimates: Time frame for preparation and payment Retainage

D. Job safety: Standards to be followed Department involvement and responsibility

E. Value engineering; cost reduction incentive.

F. Partnering; encourage and explain concept.

G. Equal Employment Opportunity: Specific E.E.O. Responsibilities DBE Special Provisions Training

H. Labor Compliance: Submission of payrolls Davis-Bacon wages

I. Work delays: Anticipated Move-outs by the Contractor Unanticipated Weather By others (subcontractors, utilities) Need to discuss delays in a timely manner.

J. Contract features: Special provisions, clarifications Typical sections Items of work; nature, measurement, payment Standard items Specialty items Special equipment Special materials Unusual working conditions Additional plans and drawings needed Special measurement and acceptance procedures By plan quantity By project section

K. Extra Work: Prior approval needed Compensation; amount and procedure

L. Post construction meeting: Project acceptance procedure; punch list. Good communications between the Department and Contractor in finalizing project. Final payment procedure. Submittal of time adjustments and cost adjustment claims; time limit for submittal.

M. Special permits required by the Department.

6. Public Relations

Resident Engineer contact, informational meetings with: News media Abutting property owners, residences, businesses Local governmental officials Local services (mail, police, fire, school bus) Area residents

7. Construction Work Schedules

A. Overview by the Department:

Notification-to-start procedures

Contractor Utilities

Railroads.

Existing agreements, memos of understanding with:

Utilities

Railroads

Other Contractors

Coordination with Other projects and Contractors

Local governments

Ordinances and permit requirements

Utilities and railroads

B. Contractor's work schedule:

Major work items

Plan of work operations

Time frame

Progress Schedule

Number of shifts

Advance notice required for extra shift

Anticipated construction problems

Anticipated conflicts

C. Utility's work schedule:

Plan of operation

Time Frame

Current status

Contract agreement

Anticipated conflicts and problems

Line of communication with Contractor

Contractor needs to notify before digging

Exchange names, phones of authorized "reps"

Inspection of recovered utility materials

D. Railroad's work schedule:

Plan of operation

Time frame

Current status

Contract special provisions

Insurance requirements

Anticipated conflicts and problems

Temporary crossings

Line of communication with Contractor

Exchange names, phones of authorized "reps"

(At this point the conference leader may wish to excuse utility and railroad "reps" if they wish to leave.)

8. Right of Way.

A. Current Status: Agreements and commitments Buildings Easements Encroachments Fences Firewood and timber Signs

B. Unsecured parcels: Anticipated securing date

C. Procedure for notifying owners about conflicts

9. Traffic Control

A. Contract traffic plan:

Detours and bypasses

Road closing

Access

Through traffic

Local traffic, school buses, mail delivery

Non-vehicular traffic

Emergency vehicles

Notify fire and police of road closing

B. Holiday work restrictions.

C. Signing requirements:

Signing plan Conformance with Traffic Control

Plan

Barricades

Lights

Arrow Boards

Changeable / programmable message boards

Maintenance plan

Name and phone of person responsible for 24-hour

Emergency service.

Advance warning signs.

D. Flagging techniques:

Employee instruction

Available booklets, films and videos

Safety equipment for flaggers

MUTCD requirements

E. Accident reporting procedure.

F. Public news release.

G. Input from traffic enforcement officials.

H. Dust control.

I. Noise control.

10. Environmental Considerations.

    A. Protection of streams, lakes, ponds and wetlands: Erosion control measures Contract permits EIS commitments

    B. Miscellaneous: Solid waste disposal: Owner's approval needed to store or dispose Dust control and noise control for: Haul roads Crushers Mixing plants Construction hours restriction Encroachment or direct effect on wetlands Contractor's erosion control plan Hazardous waste, chemicals, underground tanks

11. Materials.

    A. Sources: Contractor to submit list of suppliers ASAP Use of standard Department form for reporting

    B. Testing and Certification: Establish list of all materials needing tests, test reports and certifications Establish needed lead times

    C. Material to be reviewed by the Department prior to use.

    D. Acceptance or rejection procedures: Disposal of rejected materials Storage of accepted materials

    E. Contractor's responsibility in using untested materials.

12. Pits, Quarries and Waste Areas.

    A. Location of pits and quarries to be used for project.

    B. Negotiations and royalties.

    C. Establishing commercial/non-commercial status: Necessary permits

    D. Contractor's obligations upon closing pit: Site restoration.

    E. Haul roads: Route selected Need to be logged before use. Local officials notified and allowed to attend. Traffic control Engineer to be notified if other than established haul roads are to used; 48-hour lead time required. Hauling hour's restriction: Dust control Noise control

13. Surveying (Refer to Standard Specification 01721)

    Control of work (Refer to Standard Specification 00727)

14. Major Work Operations (expand as needed for a project).

    A. Earthwork.

    B. Base.

C. Surface.

D. Structure.

E. Incidentals.

15. Evaluations and Critiques. Plan, specifications and special provisions
Contractor and Subcontractors Consultant

16. Labor and Wage & Equal Employment Compliance Meeting

(It may be advisable, because of the magnitude of information that must be disseminated, to have a separate meeting to discuss these contract requirements).

A. Introduction of representatives:
Contractor Subcontractors
UDOT; consultant (if applicable)

B. Equal Employment Opportunity:
Designation of EEO officers
Prime Contractor
Subcontractors
Contract provisions
Disadvantaged Business Enterprise goals
Required Federal forms PR-1391

C. Training
Apprenticeship programs On the Job Training programs

D. Wage Compliance
Submission of payrolls
Davis-Bacon requirements

E. Posting:
List of required documents;
State and Federal

F. Reviews by the Department:
Field interviews with Contractor personnel

G. Responsibility of prime Contractor for subcontractor actions.

APPENDIX B
HOLDING A POST CONSTRUCTION CONFERENCE

1. Preparing for the Conference.

A. Arrange for the:

- Date
- Time
- Room
- Agenda Handouts
- Recorder
- Exhibits, maps, etc.

B. Notify interested agencies and companies:

- Prime Contractor and subcontractors
- Utilities
- Railroads
- County Highway Departments
- Local Units of Government
- County
- City/Town
- Federal Agencies - FHWA, USFS, BLM, (as needed)
- State Agencies
  - **UDOT**
    - Region
    - Construction Engineer
    - Design Engineer
    - Maintenance Engineer
    - Materials Engineer
    - External E. E. O. Officer
    - Resident Engineer's Crew
  - **Central Office**
    - Engineer for Construction & Materials
    - Deputy Construction Engineer
    - Civil Rights Manager
    - Traffic
    - Safety
    - Hydraulics

Environmental

(Others as needed)

Other State Agencies (as needed)

Attorney General

Wildlife Resources

Division of Parks & Recreation

Highway Patrol

2. Directing the Conference

A. Register persons in attendance.

Provide sign up sheets for recording their:

Name

Agency or Company

Office Address

Office Telephone

Is copy of the minutes wanted?

Ask that all information be printed.

B. Distribute the agenda.

C. Appoint recording person.

D. Introduce attendees and direct the meeting: Summarize each major discussion.

3. Following up.

A. Prepare C199 "Post Construction Conference Report" Provide copy for:

- Final estimate
- Attendees requesting a copy
- Region File
- Others, who should be informed.

POST CONSTRUCTION CONFERENCE MODEL AGENDA

1. General Information.

    Conference date
    Conference location
    Project number
    Project location
    County
    Prime Contractor
    Description of work
    Contract execution date (Notice to Proceed)
    Original contract amount
    Final Contract Amount
    Contract time
    Starting date
    Completion date

2. Project Personnel.

    A. Authority and responsibility and names if known: Contractor’s personnel Superintendent Work supervisors (others as needed) The Department’s personnel Region Director Region Project Manager Deputy Construction Engineer Resident Engineer Inspectors (others as needed) Others (if applicable) FHWA Consultant

3. Finalizing Contract

    A. Final forms to be prepared and submitted by Contractor: Provide a separate list that shows the "when, to whom and how many" Furnish forms if applicable Project acceptance procedure; punch list Final contract quantities

    B. Time charges:

        Computation of contract time charges

        Liquidated damages (if applicable)

    C. Construction pay estimates:

        Time frame for preparation and final payment

        Retainage reduction requirements

    D. Job safety:

        Responsibility for damage claims.

E. Equal Employment Opportunity:
F. Specific E.E.O. Responsibilities (submission of reports) DBE Special Provisions (submission of final DBE Certification)

Training (discuss completed training goal) Grievances

G. Labor Compliance:

Submission of payrolls and corrections.

Grievances

H. Claims and Adjustments

Submittal of time adjustments and cost adjustment claims; time limit for submittal.

4. Pits, Quarries and Waste Areas.

A. Contractor's obligations upon closing pit:

Site restoration

B. Haul roads:

Restoration

5. General Discussion

A. Partnering:

UDOT and Contractor appraisal

Line of Communication

B. Scheduling: Contractor's assessment
C. Environmental Issues
D. Plans and Specifications
E. Contract modifications for future projects.

UDOT and Contractor recommendations.